

**Energy Performance Contract  
Phase II-B Amendment**

**between**

**The Town of Amherst**

**and**

**Siemens Building Technologies, Inc.**

**December 18, 2001**

**Project No. 990080**

**SIEMENS BUILDING TECHNOLOGIES, INC.**

## AMENDMENT/ADDITION

NUMBER 232-MQ-6076

THIS AMENDMENT to that certain Agreement between the parties hereto and dated June 4, 2001 (the "Agreement"), is made this 18th day of December 2001, by and between Siemens Building Technologies, Inc., ("SIEMENS") and the party identified below as CLIENT and effective as of the 18th day of December, 2001 ("Effective date").

|   |  | PROJECT: Town of Amherst Phase IIB Amendment No.  |
|---|--|---|
| <b>CLIENT NAME AND ADDRESS:</b><br>Town of Amherst<br>5583 Main Street<br>Williamsville, NY 14221                 |  | SIEMENS BUILDING TECHNOLOGIES, INC. (SIEMENS)<br><br>85 Northpointe Parkway<br>Suite 8<br>Amherst, NY 14228 |
| <b>DESIGNATED REPRESENTATIVE:</b> James I. Johnson, PE<br><b>PHONE:</b> (716) 631-7154 <b>FAX:</b> (716) 631-7222 |  | DESIGNATED REPRESENTATIVE :Bill Storie<br><b>PHONE:</b> (716) 568-0983 <b>FAX:</b> (716) 568-1449           |

## AMENDMENT TERMS

## ARTICLE 1: ENGAGEMENT:

1.1 CLIENT hereby engages and SIEMENS hereby accepts the engagement to perform and provide the Facility Improvement Measures, including Energy Conservation Measures, and such other goods and services (collectively the "Work") set forth in Exhibit A hereof and incorporated herein, in connection with the Project and in accordance with the terms and conditions of this Amendment.

1.2 SIEMENS represents that it is duly authorized to do business in all locations where the Work is to be performed. CLIENT represents, warrants and covenants to SIEMENS that (a) it has all requisite corporate power and statutory authority to enter into this Amendment, and that its execution hereof has been duly authorized and does not and will not constitute a breach or violation of any of CLIENT's organizational documents, any applicable laws or regulations, or any agreements with third parties; (b) it has done and will continue to do all things necessary to preserve and keep in full force and effect (i) its existence (ii) the Agreement and (iii) the Amendment; (c) this Amendment is the legal, valid and binding obligation of the CLIENT, in accordance with its terms, and all requirements have been met and procedures have been followed by CLIENT to ensure the enforceability of the Amendment; and (d) there is not pending, or to CLIENT's best knowledge, threatened, suits, actions, litigation or proceedings against or affecting CLIENT that affect the validity or enforceability of the Agreement or this Amendment.

## ARTICLE 2: TIME OF PERFORMANCE AND TERM OF AMENDMENT:

2.1 SIEMENS shall perform and complete all Work under the Amendment in accordance with the schedule set forth in Exhibit A.

## ARTICLE 3: COMPENSATION/TERMS OF PAYMENT:

3.1 As full consideration for the performance of the Work, CLIENT shall pay to SIEMENS the Additional Sum of \$1,872,812, plus applicable taxes and finance costs, in such manner as agreed in Exhibit B and in accordance with the payment terms and conditions established by the Contract Documents.

## ARTICLE 4: CONTRACT DOCUMENTS:

4.1 This Amendment shall consist of the following documents ("Contract Documents") which are acknowledged by CLIENT and SIEMENS and incorporated herein by this reference:

- AGREEMENT
- GENERAL TABLE OF TERMS
- SCOPE OF SERVICES EXHIBIT A
- COMPENSATION/PAYMENT EXHIBIT B
- PERFORMANCE SOLUTIONS EXHIBIT C
- CERTIFICATE OF FINAL COMPLETION, EXHIBIT D
- FINAL COMPLETION EXHIBIT E

4.2 The above documents constitute the entire agreement between CLIENT and SIEMENS and supersede all prior and contemporaneous negotiations, statements, representations, agreements, letters of intent, awards, or proposals, either written or oral. This Amendment may be modified only by a written instrument signed by both parties.

4.3 In the event of any inconsistency between the provisions of the Contract Documents, the inconsistency shall be resolved by giving precedence in the order listed below.

- 4.3.1 Amendment
- 4.3.3 Exhibit A, Scope of Services, including Attachments
- 4.3.4 Agreement
- 4.3.5 Exhibit B, Compensation/Payment
- 4.3.6 General Table of Terms
- 4.3.7 \_\_\_\_\_

4.4 The Effective Date on this page shall be the date as which all Contract Documents have reference for purposes of coordination of their meaning and effect. The Additional Sum relates to the Work as described in the Contract Documents in their condition on that date. Changes after the Effective Date will be dealt with in accordance with the provisions for changes. Any work commenced and any payments made pursuant to an Award or Letter of Intent shall be deemed to have been done and paid after the Effective Date and under the terms of the Amendment.

TOTAL PAGES ATTACHED (INCLUDING EXHIBITS): 43

AGREED FOR CLIENT:

AGREED FOR SIEMENS BUILDING TECHNOLOGIES, INC. (SIEMENS):

SIGNATURE BY:

DATE:

DATE:

PRINT NAME & TITLE:

PRINT NAME & TITLE:

**SIEMENS BUILDING TECHNOLOGIES, INC.****GENERAL TABLE OF TERMS**

The following terms shall, for all purposes of the Contract Documents comprising this Agreement, have the meanings stated herein, unless the context otherwise specifies or requires or unless otherwise defined in the Contract Documents:

**"Acceptance"** means the CLIENT has signed the Certificate of Substantial Completion.

**"Acceptance Date"** means the date on which the CLIENT signs the Certificate of Substantial Completion.

**"Annual Period"** means a twelve (12) month period beginning on the Effective Date or on any anniversary date thereof.

**"Certificate of Substantial Completion"** means documentation executed by CLIENT agreeing that the Work, or a designated portion of the Work, is Substantially Complete in accordance with the Agreement and such Work is accepted by the CLIENT.

**"Construction Period"** means the period between the Commencement Date and the first day of the month following the Substantial Completion Date.

**"Energy Conservation Measure"** or **"ECM"** means the equipment, devices, materials and/or software as installed by SIEMENS at the Facilities, or as repaired or replaced by CLIENT hereunder, for the purpose of improving the efficiency of utility consumption.

**"Equipment"** means that the installed products to be provided by SIEMENS as described in the Scope of Services, Exhibit A.

**"Facilities"** means those building(s) or structure(s) where Work will be installed or implemented. It shall have the same meaning as the term Site.

**"Facility Improvement Measures"** or **"FIMs"** means the methods, techniques, application of know-how, installation of devices or otherwise, described in the Scope of Services Exhibit A, that are undertaken by SIEMENS as a result of this Agreement with the intent of generating net savings or efficiencies at or in connection with the operation of the Facilities or the Site, including without limitation the ECMs, OIMs, TIMs, USMs, WCMs, and any other, non-conservation-related activities, means or methods.

**"Operational Improvement Measure"** or **"OIM"** means the programs, practices, methodologies, devices, materials and/or software as installed or instituted by SIEMENS at the Facilities, or as instituted by CLIENT hereunder, for the purpose of improving the efficiency of operations activities, operational costs and/or operational results as described in the Scope of Services Exhibit A.

**"Services"** means those services to be provided by SIEMENS as described in the Scope of Services, Exhibit A.

**"Site"** shall have the same meaning as Facilities.

**"Substantial Completion"** or **"Substantially Complete"** means the first to occur of the following: (i) the Work, or any identifiable portion thereof, is sufficiently complete, in accordance with the provisions of this Agreement relating to the scope of the Work, that CLIENT will be able to realize from such Work substantially all of the practical benefits intended to be gained therefrom, or otherwise to employ the Work or the FIMs associated therewith for their intended purposes; or (ii) temporary, qualified or final certificates of occupancy have been issued with respect to such portions of the Work by the appropriate public authority.

**"Technical Support Program"** or **"TSP"** means the technical services to be provided by SIEMENS to the CLIENT during the Performance Guarantee Period, commencing on the Acceptance Date, which are as described in the Scope of Services, Exhibit A.

**"Term"** means the entire period from the Effective Date of this Agreement until the termination or expiration of this Agreement as set forth herein.

**"Technology Improvement Measure"** or **"TIM"** means the application of new technology as described in the Scope of Services Exhibit A.

**"TSP Escalation Percentage"** means the greater of 4.5% or the net change in the Consumer Price Index (CPI). The changes in CPI shall be calculated by taking the difference between the CPI on the anniversary of the Effective Date of this Agreement and the CPI one year earlier and dividing that difference by the CPI as it existed one year earlier. For the purposes of those calculations, the CPI to be used is the one determined by the U.S. City Average Consumer Price Index/Service Price Index for all Urban Consumers (1982-84 = 100) found in Table 16 of the Consumer Price Index Report published by the Bureau of Labor Statistics of the United States Department of Labor under the Commodity and Service Group, in the region encompassing the location of the Work.

**"TSP Services"** means the Services performed pursuant to the Technical Support Program as stated in the Scope of Services, Exhibit A.

**"TSP Scope"** means the Scope of Services to be performed under the Technical Support Program as stated in the Scope of Services, Exhibit A.

**"Utility Services Measure"** or **"USM"** means the application of Utility services methods and technology as described in the Scope of Services Exhibit A.

**"Work"** means the collective Services and Equipment comprising the FIMs to be performed by the SIEMENS as described in the Scope of Service, Exhibit A.

**SIEMENS BUILDING TECHNOLOGIES, INC**  
**SCOPE OF SERVICES – EXHIBIT A - AMENDMENT**

**Article 1: SCOPE OF SERVICES**

1.1 The facilities included in this project consist of the following:

**1. Waste Water Treatment Plant**

**FIM #1: Grit Chamber High Efficiency Motors**

There are three (3) blowers at the grit chambers. The blowers are driven by 30 HP electric motors. Two (2) of the blowers operate continuously at approximately 85.6 % loading. The third motor is used as standby. All blowers are controlled locally.

Replace all three (3) of the existing 30 HP motors with energy efficient motors. Due to the motor's usage rotation, the standby motor will also be replaced.

**FIM #2: Oxygen Transfer Basins High Efficiency Motors and VFD's**

There are 18 mixer motors at the oxygen transfer basins (Stages 1 & 2). The motors operate continuously. Presently all motors operate at constant speeds regardless of the oxygen levels in basins wastewater. Stages 1 & 2 at the oxygen transfer basins are comprised of 6 and 12 motors respectively and are rated as follows:

| <u>Stage 1</u> | <u>Stage 2</u> |
|----------------|----------------|
| 2-50 HP        | 4-40 HP        |
| 2-40 HP        | 4-25 HP        |
| 2-30 HP        | 4-25 HP        |

Replace the following standard efficiency motors with high efficiency motors:

Stage 1: 2-50 HP, 2-40 HP and 2-30 HP  
Stage 2: 4-40 HP and 8-25 HP

Install variable frequency drives to the following proposed high efficiency motors:

Stage 1: 2-50 HP  
Stage 1: 2-40 HP  
Stage 2: 4-40 HP  
Stage 2: 4-25 HP

Presently, the above mixer motors operate at constant flow regardless of the oxygen levels in the transfer basins. The oxygen levels currently run at higher levels than required. Per the Town of Amherst's direction, the stipulated operation of the motors will be as follows: variable frequency drives will be installed to the 2-50 & 2-40 HP (Stage 1), and 4-40 & 4-25 HP (Stage 2) motors these motors will be operated at a fixed 20% speed reduction.

**FIM #3: Modify Oxygen Transfer Basins Operation (Stages 1 & 2) and Add Soft Starts  
(Approved with Phase II-B)**

The oxygen transfer basin motors operate 24 hours/day, year-round. There are a total of 18 motors and they all operate at constant speed to maintain the basin oxygen levels at an acceptable level. Stages 1 & 2 are comprised of 6 and 12 motors respectively. The different motor ratings are as follows:

| <u>Stage 1</u> | <u>Stage 2</u> |
|----------------|----------------|
| 2-50 HP        | 4-40 HP        |
| 2-40 HP        | 4-25 HP        |
| 2-30 HP        | 4-25 HP        |

Motor demand and consumption will be reduced by staggering the operation of six (6) mixer motors – 2 motors in stage 1 (2-30 HP) and 4-25 HP motor in stage 2. In addition Soft Starts will be installed on all six (6) of the motors, this will reduce demand spikes during motor start-up. The new sequence of operation of these mixer motors is outlined below.

| <u>Stage 1</u> |     | <u>Stage 2</u> |     |
|----------------|-----|----------------|-----|
| On             | Off | On             | Off |
| 1-30 HP        | ✓   | 1-25 HP        | ✓   |
| 1-30 HP        | ✓   | 1-25 HP        | ✓   |
|                |     | 1-25 HP        | ✓   |
|                |     | 1-25 HP        | ✓   |

When the new sequence of operation is implemented, out of the six motors only one will operate at any given time. All motors will be sequenced to turn on and off via the energy management system. Per the Town of Amherst's, direction the stipulated operation of the motors will be as follows: the optimum motor operation periods have been determined to be 10 minutes on and 20 minutes off. Energy consumption will be permanently reduced by 72% and demand permanently reduced by 83%.

**FIM #4: Process Water High Efficiency Motors**

There are three (3) process water pumps at Building #27. The pumps are driven by 60 HP electric motors. All three (3) pumps operate continuously at approximately 65.3% loading.

Replace the existing 3-60 HP motors with energy efficient motors. Presently, the 3-60 motors operate at constant flow regardless of the plant process water requirements.

**FIM #6: Mixed Liquor Channel High Efficiency Motors**

There are three (3) blowers at the mixed liquor channel. The fans are driven by 125 HP electric motors. One of the fans operates continuously at approximately 76.9% loading. The second motor is only operated during the summer and it also operates at 76.9% loading. The third motor operates as a stand-by.

Replace the existing 3-125 HP motors with energy efficient motors. Presently, 2 of the 125 HP motors operate at constant flow.

**FIM #10a: Energy Management System Expansion**

The SCADA system at the Amherst Waste Water Treatment Plant currently consists of the following hardware and software components:

PLC's

1. Allen Bradley PLC 5 plcs on Ethernet (Building #4 – Solids Handling)
2. Allen Bradley PLC 5 Remote I/O (Building #53 – Digester Control)
3. Standalone Mitsubishi plcs (Building #8 – De-chlorination)
4. Standalone Allen Bradley PLC 2 plc (Building #1 – Influent Pumping)

HVAC Controllers

1. Barber Colman Microzone Controllers

PC based I/O

1. RS 485 PC based I/O (Building #13 – Control Room)

Personal Computers (Control System)

1. Andritz Drum Dryer Control and Monitoring PC (Building #4 – Solids Handling), Wonderware Intouch 64,000 tag version 7.1 with development software
2. Digester Control and Monitoring PC (Building #4 – Solids Handling), Wonderware Intouch 64,000 tag version 7.1
3. PC based I/O SCADA PC (Building #13 – Control Room), Wonderware Intouch 64,000 tag version 7.1 with development software
4. Lift Station Telemetry PC (Building #13 – Control Room), Wonderware Intouch 64,000 tag version 7.1
5. Standalone HVAC Control PLC (Building #13 – Control Room), Wonderware Intouch for Intelligent Buildings (SIEBE) KEPware comm driver

Personal Computers (Non-SCADA Office NT Workstations)

1. Building #4 – (2) locations
2. Building #13 – multiple locations
3. Building #11 – (2) locations
4. Building #51 – (2) locations

The SCADA PC in Building #13 provides redundant monitoring and control for the two PC's in Building #4.

The lift stations located throughout the Town all communicate via licensed radios to the Town Engineering Building. The logged information is then sent to the Lift Station Telemetry PC located in Building #13 via leased telephone line once per day unless there is an alarm. During an alarm, the alarm information is sent immediately via radio/leased line telephone for acknowledgement at the Lift Station Telemetry PC.

A standalone HVAC Control PC in Building #13 controls the air handlers in Building #4 and can be easily connected to the air handlers in Building #13. The control is currently for temperature setpoint only.

The existing Ethernet services Buildings #10, 4, 13, 11 and 51. Twisted pair conductors currently run from the stage one clarifiers to Building #5, stage two clarifiers to Building #6 and from Buildings #26 and #10 to Building #8. The twisted pairs are then wired via RS485 I/O blocks to the SCADA PC in Building #13.

Install a new Energy Management System to provide a common communication highway and automatic load shedding capabilities.

The objectives of the proposed EMS are the following:

1. Provide automation, control and reporting of the events and setpoints needed to accomplish facility improvement measures (FIM's).
2. Provide a common backbone or data highway that is easily implemented into the existing SCADA system.
3. Provide a common backbone or data highway that is state-of-the-art and easily expandable for future control and monitoring of additional upgrades.
4. Provide additional or move existing PC's to better accomplish the M&V plan.
5. Expand the existing Ethernet network to include additional buildings for monitoring and control of the proposed FIM's.
6. Provide an automated means of producing measurement and verification (M&V) reports for NYSERDA funds allocated to this project.
7. Provide an automated means of M&V reports for the Town of Amherst.

The following I/O points need to be controlled and monitored to satisfy FIM and M&V requirements:

|              |  |
|--------------|--|
| Building #1  | (AI) current transmitter on Lighting Panel #1<br>(6DO) – HID dimmer control<br>(6DI) – HID dimmer control<br>(AI) current transmitter on Lighting Panel #2<br>(6DO) – HID dimmer control<br>(6DI) – HID dimmer control<br>(Ethernet) Gas Engine Pump #3  |
| Building #33 | (Ethernet) 4,160 VAC power monitor for Building #1 feed  |
| Building #2  | (modbus) – 2 Veris power monitors for blowers<br>(AI) current transmitter on lighting panel<br>(6DO) – HID dimmer control<br>(6DI) – HID dimmer control  |
| Building #3  | (AI) current transmitter on lighting panel<br>(6DO) – HID dimmer control<br>(6DI) – HID dimmer control<br>(AI) lumen transmitter   |
| Building #40 | (AI) current transmitter on lighting panel<br>(6DO) – HID dimmer control<br>(6DI) – HID dimmer control<br>(AI) lumen transmitter   |
| Building #4  | (AI) current transmitter on Lighting Panel #1<br>(6DO) – HID dimmer control<br>(6DO) – HID dimmer control<br>(AI) current transmitter on Lighting Panel #2<br>(6DO) – HID dimmer control<br>(6DO) – HID dimmer control<br>(AI) current transmitter on Lighting Panel #3<br>(6DO) – HID dimmer control<br>(6DO) – HID dimmer control<br>(AI) current transmitter on Lighting Panel #4<br>(6DO) – HID dimmer control |

(6DO) – HID dimmer control

- |              |   |
|--------------|---|
| Building #5  | (modbus) – 2 Veris power monitors for blowers<br>(AI) current transmitter on lighting panel<br>(6DO) – HID dimmer control<br>(6DI) – HID dimmer control<br>(AI) – lumen transmitter |
| Building #6  | (AI) current transmitter on lighting panel<br>(6DO) – HID dimmer control<br>(6DI) – HID dimmer control<br>(AI) – lumen transmitter  |
| Building #27 | (9) (modbus) – 2 Veris power monitors for Pumps #1 and #2<br>(AI) current transmitter on lighting panel<br>(6DO) – HID dimmer control<br>(6DI) – HID dimmer control                 |
| Building #38 | (modbus) – 6 Veris power monitors for 6 mixers and VFD's  |
| Building #39 | (modbus) – 4 Veris power monitors for 4 mixers and VFD's  |

The existing Ethernet will be expanded to include Buildings #1, 5, 6, 7 and 8. In this way, the most efficient control and M&V of the proposed FIM's is possible. There are currently hubs located in Buildings #13 and #4. Additional hubs or switches will be located at:

1. In Tunnel #1 adjacent to Building #3
2. Building #1
3. Building #5
4. Building #6
5. Building #8
6. Building #4

Ethernet ready PLC's or I/O blocks will then be located as stated above to monitor and control the I/O points listed. The following routing will be used to run fiber optic or Ethernet cable:

1. Conduit from Building #13 to Building #1
2. Tunnel #2 from Building #4 to #5 and #6
3. Pipe vault from Building #6 to Buildings #7 and #8

**FIM #11: Natural Gas Engine Drive for Main Sewage Pump**  
**(Approved with Phase II-B)**

**Main Sewage Pumps**

There are four main sewage pumps driven by 600 HP electric motors in Building #1. Each pump has a design flow of 50 MGD (million gallons per day); the plant processes 24 MGD on average. One pump operates continuously at approximately 50% loading (electrically), equal to 225 kW or approximately 280 brake horsepower.

The main sewage pumps are controlled by Eddy Current variable torque controls that vary pump speed from 350 RPM to 490 RPM. During normal operation at the facility, pump speed generally varies between 390 and 410 RPM, with increases to 480 RPM during periods of high flow. This is based on Plant Flow logs recorded hourly during December 2000. During periods of high flow (typically all or part of 35 days per year) a second pump is required.

Pumps #3 and #4 have been refurbished, Pumps #1 and #2 have their original motors.

#### Facility Thermal Loads – Space Heating

Building #1 is heated by a gas-fired hot water boiler and hydronic unit heaters. There are two rooftop ventilation units with air-to-air heat recovery and electric heating coils. The unit serving the wet well is operating at less than 50% of design for supply and exhaust CFM and is maintaining only a 50° discharge air temperature. The unit serving the dry well was not operating during our site visits. Building #41 is heated with electric unit heaters; this area is maintained at minimal temperatures during the winter months. There are two other gas-fired hot water boiler plants located nearby that are used for space heating. These are located in Buildings #2 and #4.

Install a natural gas engine outside of the dry well and a right angle gear to replace the electric motor on one of the main sewage pumps. The natural gas engine-driven pump will become the base load pump. The natural gas engine will provide variable speed control of the pump while reducing peak demand charges and electricity use.

The waste heat will be used to offset the following space heating thermal loads, which are listed in order of ease of construction:

1. Gas-fired hydronic heat in Building #1 (Boilers #1a and #2a)
2. Gas-fired hydronic heat in Building #2 (Boiler #1, located approximately 500' Northeast of Building #1)
3. Gas-fired hydronic heat in Building #4 (Boilers #4 and #5, located approximately 650' Northeast of Building #1)

These thermal loads are space heat-sensitive, meaning they vary throughout the year based on outdoor air temperature. The waste heat recovered from the natural gas engine will therefore, be fully used when outdoor air temperatures are low, and only partially used during the warm summer months.

#### **FIM #14: Natural Gas Engine Drive for Oxygen Compressor**

The oxygen generating facility has two compressors driven by 3,550 RPM electric motors operating at 4,160 volts. The smaller compressor has a 600 HP motor that is generally loaded to 83% of nameplate; it operates 24 hours per day throughout the year, unless the larger compressor is operating. The larger compressor has a 900 HP motor; it is used once per year during the carbon bed regeneration campaign to refill the oxygen storage tank. The 900 HP compressor typically operates one month per year; the smaller compressor operates the other 11 months per year.

#### Process Thermal Loads

There is a hot water boiler located in the Digester Control Building that operates 12 months per year to maintain the digesters at 98°F. This boiler normally burns natural gas that is purchased. It is also able to burn digester gas that is produced by the digesters. This gas varies in methane content, averaging 54% methane by volume. Based on logs from the last three months of 2000, digester gas is burned in this boiler 18% of the time. On days when digester gas is burned, the boiler burns an average of 27,000 cubic

feet of digester gas per day; this is equivalent to 140.8 CCF of natural gas per day. This is equivalent to a thermal load of 483,424 BTU/hour output with a burner efficiency of 80%.

There is also a sludge drum dryer that operates 24 hours per day, three to five days per week, depending on equipment breakdowns. This unit is direct-fired on natural gas. Digester gas is piped to it, but there is insufficient digester gas to operate the burner on digester gas alone; the digester gas cannot be blended with natural gas. This unit draws combustion air from interior spaces in Building #4.

#### Digester Gas Production

Digester gas that is not burned by the digester boiler is flared off, i.e., it is burned without yielding an economic benefit. Digester gas production improved over the last 12 months as a result of modifications to the plant process. Based on the last eight months of available data (September 2000 to April 2001), the digesters produced the equivalent of 13,166 CCF of natural gas per month. At this rate, the annual production of digester gas is equivalent to 157,989 CCF of natural gas per year. Historically, only the equivalent of 9,251 CCF of natural gas is burned by the digester boiler; the remainder is flared off.

Install a new 600 HP gas engine to replace the existing 600 HP electric compressor motor.

Install piping to supply the engine with digester gas produced by the digesters. This will allow part of the engine's fuel requirements to be met by the digester gas produced on site, thereby reducing the operating cost of the engine. This will avoid the need to flare off excess digester gas.

The waste heat from the natural gas engine may be recovered from the engine jacket coolant or, with the specification of additional equipment, from the engine exhaust. Approximately 27% of the BTU content of the fuel used by the engine is recoverable as waste heat from the jacket coolant. An additional 13% is available from the engine exhaust.

Waste heat from the engine jacket and exhaust will be used to heat the hot water that maintains the digesters at 98°. The digester hot water boiler located in the digester control building will become a backup unit for periods when the engine requires servicing. This combination represents the best use of the digester gas production and the waste heat from the engine because of the 24 hour per day, 7 day per week characteristic of the loads throughout the year.

The waste heat will then be used to offset the gas fired hydronic heat in Building #4 (Boilers #4 and #5).

Another source of waste heat considered, but not recommended, include preheating the combustion air for the sludge dryer. This would occur when outdoor air temperatures are above 55°F.

#### **Article 2: CONSTRUCTION PERIOD**

2.1 SIEMENS shall commence the work December 19, 2001, and shall perform the work diligently.

2.2 Milestones: Specific scheduling milestone and coordination requirements are as follows:

\* Complete construction schedule will be provided at initial job meeting and updated at weekly progress meetings.

**Article 1: CLIENT PROVIDING COMPLETE FUNDING**

1. **PRICE.** As full consideration for the performance of the Work, the CLIENT shall pay SIEMENS the Contract Sum of \$1,872,812 and shall be deposited in an escrow account and distributed as shown in Table 2.1 below.
2. **ESCROW.** The CLIENT has agreed to deposit the Contract Sum in an Escrow Account at a financial institution satisfactory to both the CLIENT and SIEMENS. All interest income and expenses to establish the Escrow Account shall be the complete responsibility of the CLIENT and the CLIENT will receive all interest earnings from the Escrow Account. Siemens will submit periodic invoices to the CLIENT based on the following Payment Schedule in Table 2.1 below. The CLIENT shall be responsible for submitting the necessary documentation to the Escrow Agent for timely withdraws from the Escrow Account. The funding of the Escrow Account in an amount equal to or greater than the Price stated in Section 2 above shall be a condition precedent to SIEMENS obligation to perform or to continue the performance of the Work. SIEMENS may waive the Escrow Account requirements. If the Escrow Account is not funded within Sixty Days (60) days from the execution of this Agreement, this Agreement shall be null and void. This Sixty Days (60) day period may be extended as mutually agreed upon in writing by both parties. In the event that the Agreement becomes null and void as described in this paragraph and CLIENT has authorized SIEMENS to proceed with Work, CLIENT shall be obligated to reimburse SIEMENS: (i) for the Work performed to date; or (ii) as specified in CLIENT's authorization to proceed with Work.

**TABLE 2.1 PAYMENT SCHEDULE**

(Payable to Siemens)

| PROJECT PHASE        | PAYMENT (\$)       | PAYMENT (%) |
|----------------------|--------------------|-------------|
| Month 1              | \$468,203.00       | 25%         |
| Month 2              | \$374,562.40       | 20%         |
| Month 3              | \$374,562.40       | 20%         |
| Month 4              | \$374,562.40       | 20%         |
| Month 5              | \$187,281.20       | 10%         |
| Month 6              | \$93,640.60        | 5%          |
| <b>PROJECT TOTAL</b> | <b>\$1,872,812</b> | <b>100%</b> |

3. **TIMELY PAYMENTS.** The CLIENT agrees to make payments per Table 2.1 above. CLIENT agrees to pay all invoices on this agreement within 45 days of the date of each invoice. CLIENT agrees to pay 1% per month limited to the maximum rate allowable by law as a late charge on any and all overdue amounts.

This Exhibit is attached to and made a part of the Agreement between SIEMENS and the CLIENT, dated December 18, 2001

**CLIENT:**

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

**SIEMENS:**

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

# SIEMENS BUILDING TECHNOLOGIES, INC.

## COMPENSATION/PAYMENT - EXHIBIT B

### Article 1: TECHNICAL SUPPORT PROGRAM (TSP) COMPENSATION SCHEDULE

1. **TSP TERM.** The term of the TSP shall be 10 years and shall commence on the Substantial Completion Date set forth in Exhibit E.
2. **TSP COMPENSATION.** CLIENT agrees to pay SIEMENS the additional sum of \$ 1,036,640.00 ("TSP Sum") for the Technical Support Program as described in the Scope of Services, Exhibit C, Article 7. The TSP Sum is payable according to the schedule below. The payments are due on or before the dates listed in the schedule.

| Date    | Annual Amount |
|---------|---------------|
| Year 1  | \$80,000      |
| Year 2  | \$84,575      |
| Year 3  | \$89,386      |
| Year 4  | \$94,442      |
| Year 5  | \$99,757      |
| Year 6  | \$105,343     |
| Year 7  | \$111,215     |
| Year 8  | \$117,383     |
| Year 9  | \$123,865     |
| Year 10 | \$130,674     |

3. **TSP AUTOMATIC RENEWAL.** The TSP shall automatically renew for successive one (1) year periods beginning on the anniversary date of the original term as set forth in the Proposal, unless stated otherwise in the TSP Agreement. Either party may terminate or amend the TSP at the end of the initial term or at the end of a renewal term by giving the other party at least sixty (60) days prior written notice of such amendments or intent not to renew. Each renewal shall be and remain subject to the terms and conditions of this Agreement.

This Exhibit is attached to and made a part of the Agreement between SIEMENS and the CLIENT, dated December 18, 2001.

**CLIENT:**

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

**SIEMENS:**

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

Date \_\_\_\_\_

## SIEMENS BUILDING TECHNOLOGIES, INC.

### PERFORMANCE SOLUTIONS – EXHIBIT C

The following Articles and Table are attached and made part of this Exhibit C:

- |                                     |   |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | Performance Solutions Table of Terms                            |
| <input checked="" type="checkbox"/> | Article 1 Performance Guarantee                                 |
| <input checked="" type="checkbox"/> | Article 2 Stipulated Savings                                    |
| <input checked="" type="checkbox"/> | Article 3 Guarantee Term Responsibilities of SIEMENS and CLIENT |
| <input checked="" type="checkbox"/> | Article 4 Unit Energy Costs and Annual Percentage Increase      |
| <input checked="" type="checkbox"/> | Article 5 Schedules of Primary Building Occupancy               |
| <input checked="" type="checkbox"/> | Article 6 Measurement and Verification Plan                     |
| <input checked="" type="checkbox"/> | Article 7 Technical Support Program                             |

This Exhibit is attached to and made a part of the Performance Solutions between SIEMENS and the CLIENT, dated December 18, 2001.

**SIEMENS BUILDING TECHNOLOGIES, INC.**

**PERFORMANCE SOLUTIONS TABLE OF TERMS**

The following terms shall, for all purposes of the Contract Documents comprising this Agreement, have the meanings stated herein, unless the context otherwise specifies or requires or unless otherwise defined in the Contract Documents:

**"Accumulated Realized Savings"** means the sum of the actual savings achieved from the Effective Date of this Agreement through the end of the current Annual Period, derived from the sum of Measured & Verified Savings plus the Stipulated Savings.

**"Accumulated Guaranteed Savings"** means the sum of the Guaranteed Measured & Verified Savings plus the Stipulated Savings from the Effective Date of the Agreement through the end of the current Annual Period.

**"Annual Guaranteed Savings"** are the Measured & Verified Savings and the Stipulated Savings that occur in any Annual Period of the Guarantee Term.

**"BTU"** a unit of thermal energy defined as a British Thermal Unit.

**"Construction Period Savings"** means the actual accumulated Measured & Verified Savings plus the Stipulated Savings achieved from the Effective Date of this Agreement until the Acceptance Date.

**"Energy Conservation Measure"** or **"ECM"** means the equipment, devices, materials and/or software as installed by SIEMENS at the Facilities, or as repaired or replaced by CLIENT hereunder, for the purpose of improving the efficiency of utility consumption.

**"Escalation Factor"** means an annual escalation percentage to be applied to the previous year's Energy Savings, Operational Savings and Technical Support Program, beginning the second Annual Period after the Acceptance Date.

**"Excess Savings"** means the Realized Annual Savings less the Annual Guaranteed Savings for the Annual Period. If the amount is zero or less there is no Excess Savings amount for that Annual Period.

**"Guaranteed Savings"** means the amount of savings that this Agreement anticipates will be achieved at the Facilities under this Agreement, calculated as the aggregate of the Measured & Verified Savings and the Stipulated Savings amounts identified in this Performance Guarantee, Exhibit C, but not to exceed the aggregate of the Contract Sum; the TSP Payments; and the CLIENT's cost of financing the Work.

**"Guaranteed Measured & Verified Savings"** means the Measured & Verified Savings guaranteed to be achieved as described in the Performance Guarantee, Exhibit C.

**"kW and kWh"** means Kilowatt and Kilowatt hour, respectively.

**"Measured and Verified Savings"** means those savings which can be measured and verified by the methodology as set forth in Article 6, Exhibit C.

**"Realized Annual Savings"** means the actual savings achieved by the CLIENT during an Annual Period, calculated as the sum of the Measured & Verified Savings plus the Stipulated Savings.

**"Savings Shortfall"** means the Annual Guaranteed Savings less the Realized Annual Savings for the Annual Period. If the amount is zero or less there is no Savings Shortfall amount for that Annual Period.

**"Stipulated Savings"** are the savings that have been mutually agreed upon and stipulated to by SIEMENS and the CLIENT prior to or upon implementation of the Performance Solutions. The stipulated savings for each Annual Period, with the corresponding Escalation Factor, are set forth in this Exhibit C.

**"Therm"** A measure of energy equal to 100,000 BTUs.

**"Total Guaranteed Savings"** are the amount of savings actually achieved, calculated and adjusted as set forth in Exhibit C. Total Guaranteed Savings include all savings guaranteed to be achieved during the Construction Period as well as Annual Guaranteed Savings during each Annual Period of the Term.

## PERFORMANCE GUARANTEE

### 1.1 Performance Guarantee

SIEMENS guarantees that the Guaranteed Savings generated from the Effective Date to the last date of the Performance Guarantee Period will be equal to the Total Guaranteed Savings shown on Table 1.2. The measurement and verification calculation methodology for determining the Measured & Verified Savings is set forth in Article 6, Exhibit C. The Performance Guarantee is dependent upon and is subject to the express condition precedent that the CLIENT enter into and maintain, during the entire term of the Performance Guarantee Period, the Technical Support Program. If the CLIENT fails to enter into, breaches, cancels or otherwise causes the termination of the Technical Support Program this Performance Guarantee shall terminate immediately and be void and of no force or effect.

### 1.2 Guaranteed Savings

The Guaranteed Savings amounts are summarized in Table 1.2 below.

TABLE 1.2

| Annual Period | Existing Baseline Energy Expenses | Guaranteed Measured & Verified Savings | Stipulated Savings | Total Guaranteed Savings |
|---------------|-----------------------------------|--|--------------------|--------------------------|
| Year 1        | \$2,020,857                       | \$154,811                              | \$115,188          | \$269,999                |
| Year 2        | \$2,081,483                       | \$154,811                              | \$115,188          | \$269,999                |
| Year 3        | \$2,143,927                       | \$154,811                              | \$115,188          | \$269,999                |
| Year 4        | \$2,208,245                       | \$154,811                              | \$115,188          | \$269,999                |
| Year 5        | \$2,274,492                       | \$154,811                              | \$115,188          | \$269,999                |
| Year 6        | \$2,342,727                       | \$154,811                              | \$115,188          | \$269,999                |
| Year 7        | \$2,413,009                       | \$154,811                              | \$115,188          | \$269,999                |
| Year 8        | \$2,485,399                       | \$154,811                              | \$115,188          | \$269,999                |
| Year 9        | \$2,559,961                       | \$154,811                              | \$115,188          | \$269,999                |
| Year 10       | \$2,636,760                       | \$154,811                              | \$115,188          | \$269,999                |
| TOTALS        | \$47,317,226                      | \$1,548,110                            | \$1,151,880        | \$2,699,990              |

### **1.3      Guarantee Accounting**

SIEMENS shall prepare an annual reconciliation statement within the later of forty-five (45) calendar days after receipt of complete utility data or seventy-five (75) calendar days of the last day of each Annual Period to determine whether Realized Annual Savings for such Annual Period resulted in an Excess Savings or a Savings Shortfall by comparing the Annual Guaranteed Savings and the Annual Realized Savings.

Should the Annual Realized Savings for any Annual Period be more than the Guaranteed Savings for that Annual Period, SIEMENS will apply the Excess Savings toward Total Guaranteed Savings. All Construction Period Savings shall be credited toward the Total Guaranteed Savings.

Any operational and energy costs avoided by the CLIENT from any steps taken by SIEMENS in the Facilities prior to the Acceptance Date will be added to the Realized Annual Savings for the first Annual Period. This includes energy and operational savings generated during the Construction Period. In addition, any rebates will be added to total savings.

If SIEMENS can correct a shortfall through operational improvement at no expense to the CLIENT and with no future operational expenses and the CLIENT declines to allow such operational improvement then any future shortfall the improvement would have corrected will be stipulated and added to the savings on a annual basis. Should the Accumulated Realized Savings at the end of the Annual Period be less than the Accumulated Guaranteed Savings, the Savings Shortfall shall be:

- a. Carried over to the next Annual Period and increase the Annual Guaranteed Savings for such Annual Period; or
- b. In the event that the Savings Shortfall occurs in the final Annual Period, SIEMENS shall pay the CLIENT the Savings Shortfall within thirty (30 ) days following the completion of the annual reconciliation for such final Annual Period.

### **1.4      Information and Changes in Use**

The CLIENT will notify SIEMENS in writing within thirty (30) calendar days of:

- a. Any material changes to energy consuming or regulating equipment, operating schedules, business/services conducted, occupancy, or hours of operation; or
- b. Any malfunctions, failures and related changes in energy consuming or regulating equipment; or
- c. Any damage to, destruction of, or condemnation of the Work.

The CLIENT will provide SIEMENS with accurate Facility operating information, including energy usage and cost, executed preventive maintenance and repair records, and occupancy levels during each Annual Period, as soon as such information becomes available to the CLIENT. Without limiting the generality of the foregoing, the CLIENT will provide SIEMENS with copies of all utility bills within thirty (30) calendar days of receipt during the Term of this Agreement.

The CLIENT will provide such remote access, through SIEMENS Insight® software package or otherwise, as SIEMENS reasonably requests. All charges related to telephone/data line installation, activation and communication services are the responsibility of the CLIENT.

### **1.5      Guarantee Limits**

The payments and credits based on Savings Shortfalls, if any, are the sole remedy of the CLIENT for this Performance Guarantee. Any payments made or to be made to the CLIENT under the terms of this Performance Guarantee shall not exceed the payments actually made by CLIENT to SIEMENS for the Contract Sum.

### **1.6      Dispute Resolution**

Any disputes concerning the calculation of the Realized Annual Savings or the Accumulated Realized Savings under this Performance Guarantee will be resolved by a third party professional engineering firm reasonably acceptable to both SIEMENS and the CLIENT. The determination of such firm will be final and binding upon CLIENT and SIEMENS. SIEMENS and the CLIENT will each be responsible for half of the fees of such firm. All disputes not resolved by negotiation shall be resolved in accordance with the Commercial Rules of the American Arbitration Association in effect at that time, except as modified herein. All disputes shall be decided by a single arbitrator. A decision shall be rendered by the arbitrator no later than nine months after the demand for arbitration is filed, and the arbitrator shall state in writing the factual and legal basis for the award. No discovery shall be permitted. The arbitrator shall issue a scheduling order that shall not be modified except by the mutual agreement of the parties. Judgment may be entered upon the award in the highest state or federal court having jurisdiction over the matter. The prevailing party shall recover all costs, including attorney's fees, incurred as a result of the dispute. If the CLIENT is a state or local governmental entity, then this paragraph shall not apply.

### **1.7      Discontinuance of Guarantee Clause**

Should the CLIENT decide to discontinue the guarantee before the end of the contract period, 30 days notice will be given and one of the following will apply:

- a. Siemens will cancel the energy monitoring section of the TSP (Technical Support Program) and the CLIENT will reinvest the avoided cost with Siemens into building improvements and services that improve the overall building(s) performance.
- b. Siemens will cancel the energy monitoring section of the TSP and the CLIENT agrees to pay to SIEMENS 5% of the remaining cost of the energy monitoring section left in the Performance Solutions period.
- c. Siemens will cancel the entire TSP and the CLIENT will pay to SIEMENS 15% of the remaining cost of the TSP left in the Performance Solutions period.

**Exhibit C**  
**Article 2**

**STIPULATED SAVINGS**

**2.1 Stipulated Savings**

The CLIENT and SIEMENS agree and stipulate that the utility, energy and operational Stipulated Savings (as detailed in Table 2.1), will be deemed to be achieved upon execution of this Agreement. These savings shall not be measured or monitored during the guarantee term. Neither the CLIENT nor SIEMENS will have any right to object to use of such amounts as the Stipulated Savings in the calculation of Annual Realized Savings.

**Table 2.1**

| <b>Source of Stipulated Operational and Energy Savings</b> | <b>Annual<br/>Stipulated<br/>Savings</b> |
|--|--|
| <b>WWTP:</b>   |  |
| 2- Oxygen Transfer Stations VFDs                           | \$64,640                                 |
| 3- Oxygen Transfer Stations Operation (Stages 1 & 2)       | \$50,549                                 |
| <b>Operational Stipulated Savings</b>                      | <b>\$0</b>                               |
| <b>TOTALS</b>  | <b>\$115,188</b>                         |

**Guarantee Term Responsibilities of SIEMENS and CLIENT**

**SAVINGS CALCULATION METHODOLOGY** (from the International Performance Measurement and Verification Protocol, December 1997)

**END-USE RETROFITS – MEASURED CAPACITY, MEASURED CONSUMPTION APPROACH**

Measured consumption approach is intended for retrofits where the end use capacity, demand or power level can be measured baseline, and the energy consumption of the equipment or sub-system can be measured post-installation over time. Measured consumption approach can involve a continuous measurement of energy use both before and after the retrofit for the specific equipment or energy end use affected by the retrofit or measurements for a limited period of time necessary to determine retrofit savings. Periodic inspections of the equipment may also be warranted. Energy consumption is calculated by developing statistically representative models of the energy end use capacity (i.e., the kW or Btu/hr) and consumption (i.e., the kWh or Btu). Additional information about the development of calibrated models is contained in Section 4.4.

**Confirming Installed Equipment Performance.** The primary difference between Stipulated consumption approach and Measured consumption approach is that the stipulated approach uses *one-time* baseline and post-installation "snap-shot" capacity, power measurements, or stipulated energy use, whereas measured consumption approach involves portable monitoring equipment installed in a facility for a *period of time or continuously* to measure the in-situ, baseline and post-installation performance of the specific equipment being replaced. Time allotted for installing portable metering devices during the baseline and post-installation periods depends on the type of equipment being measured. For example, the in-situ measurement of constant load motor replacements may take only a few hours or days baseline, and some period of post-installation. Measurement of the 24-hour profile of whole-facility lighting loads may take several weeks to one month to determine average weekday and weekend use (baseline and post-installation). End-use retrofits may not include measurement of whole-facility heating or cooling loads which would be necessary to calculate heating-cooling interaction of a lighting retrofit.

**1. CUSTOMER TO PROVIDE INFORMATION REGARDING ENERGY USAGE**

- (a) **Notice of Changes.** The Customer will notify Contractor within 30 days of:
  - (1) Any changes to operating schedules, strategies and conditions in the Facility from those described in the Exhibit titled "Operating Schedules, Strategies and Conditions;"
  - (2) Any other changes in or at the Facility that may affect energy usage, including without limitation (i) changes in operations, business conducted, occupancy, hours of operation, and energy consuming equipment and (ii) malfunctions, failures and related changes in energy consuming equipment; and
  - (3) Any damage to, destruction of or condemnation of the Energy Savings Project.
- (b) **Operating Information.** The Customer will provide Contractor with accurate facility operating information, including energy usage and cost, executed preventive maintenance and repair records, and occupancy levels during the savings period, as soon as such information becomes available to the Customer. Without limiting the generality of the foregoing, the Customer will provide Contractor copies of all utility bills within thirty (30) days of receipt.
- (c) **Remote Monitoring.** The Customer will provide two data grade telephone extensions for remote access, through the Contractor Insight® software package or otherwise, as Contractor reasonably requests.

**Exhibit C**  
**Article 3**

**2. CALCULATION OF TOTAL SAVINGS**

- (a) Contractor will calculate the Calculated Savings as the sum of the energy cost avoided plus the operational cost avoided.
- (b) Contractor and the Customer have agreed to stipulate that operational cost avoidance will be deemed to be as listed in the table included in the Exhibit titled "Energy Savings Guarantee." Neither Contractor nor the Customer will have any right to object to the use of such amounts as the operational cost avoidance in the calculation of Calculated Savings.
- (c) Any energy and operational costs avoided by the Customer from any steps taken by Contractor in the Facility prior to the Effective Date will be added to the total savings and cost avoidance for the first Annual Savings Period.
- (d) If the Calculated Savings for any Annual Savings Period exceeds the Projected Savings for such Annual Savings Period, such excess will be applied as follows:
  - (1) First, to the total energy savings and cost avoidance for such Annual Savings Period to the extent necessary to correct any deficiency in the aggregate total energy and operational cost avoidance for the program as a whole and permit Contractor to demand a refund from the Customer under the Exhibit titled "Savings Guarantee"; and
  - (2) Second, to the total energy and operational cost avoidance for the next following Annual Savings Periods in which the Calculated Savings, without the effect of such allocation, would have been less than the Projected Savings.

**3. MONTHLY CALCULATION OF ENERGY SAVINGS**

- (a) General. Except as otherwise provided, energy savings will be calculated for each month of each Annual Savings Period as the sum of (i) the total avoided energy usage for each applied measure multiplied by (ii) the effective unit cost of energy for such month of such Annual Savings Period, adjusted as described below.
- (b) Sources of Data. For each month of the base year and each month of the term of the contract, data shall be obtained as follows:
  - (1) Weather - weather data shall be obtained from the National Weather Service, NOAA or Accuweather for the nearest weather station to the Facility.
  - (2) Energy Use & Cost - Electricity usage data shall be obtained from the on-site metering of electrical production from the generators. Costs used for savings calculations will be based on the rate in effect for the corresponding period in the base year, whichever is greater. The rate in effect during the base year will be designated the floor energy rate. The floor energy rate is the minimum energy rate used to calculate energy cost avoidance and is defined as the rates in effect at the time of the Base Year as described below and in Exhibit 5.

Natural gas usage's shall be determined by the method described above with utility bill correlation.

- (c) Determination of Base Period Data. The Customer and Contractor have agreed on a twelve month time period whose energy consumption is representative of the Facility's energy use and cost prior to the date of this Agreement (the "Base Year") and parameters which affect the energy usage and cost of the Facility, including, but not limited to, utility rates, local weather profile, Facility square footage, environmental conditions, schedules (e.g. lighting, HVAC, people), and, at Contractor's option, an inventory of equipment in the Facility (the "Base Period Data"). The Base Period Data is listed in Schedule 3 of this Agreement.

**Exhibit C**  
**Article 3**

Contractor will adjust energy savings for variations in energy consumption due to (1) local weather conditions, (2) occupancy level changes, hours of operation, (3) structural modifications, modifications to energy consuming equipment, (4) damaged or malfunctioning equipment, and (5) any variances from the proposed operating schedules, strategies and conditions upon which the calculated savings are based are described in the Schedule titled "Operating Schedules and Conditions" that could affect energy usage. There may be changes in the Facility's usage and operation for which a calculated adjustment is necessary. Either the Customer or Contractor may propose an adjustment procedure based upon acceptable engineering practices to account for any such changes.

**Exhibit C**  
**Article 4**

**Unit Energy Costs and Annual Percentage Increase**

The average unit energy costs for the *Town of Amherst* for the Base year from January 00-December 00 of the Performance Guarantee are set forth below and shall be used for all calculations made under this Schedule.

| Facility | Avg. Electricity Cost (\$/ kWh) | Incremental Electricity Cost (\$/kWh) | Avg. Electricity Energy Usage (kWh/Yr.) | Demand Cost (\$/kW) | Avg. Electric Demand (kW/Yr.) | Gas CCF/Yr | Gas Unit Cost (\$/CCF) |
|----------|---------------------------------|---------------------------------------|---|---------------------|-------------------------------|------------|------------------------|
| WWTP     | \$0.076                         | \$0.060                               | 20,953,991                              | \$9.16              | 36490                         | 502,980    | \$0.452                |

**Note:**

- 1- Avg. Electricity Costs include Demand Cost
- 2- Gas Unit Cost is based on new contract gas rate provided by the customer

**Exhibit C**  
**Article 5**

### Schedules of Primary Building Occupancy

#### **Operating Schedules and Conditions:**

**Facility:** Waste Water Treatment Plant

#### **Temperature Setpoints**

Administration Building  
HRVU LAT Setpoint – 40°F (Measures at 50°F to 60 °F)

#### **Occupancy Schedule**

Weekday: Administration Building: from 8:00 a.m. to 5:00 p.m.  
All Other Areas: 24 Hours

Saturday: Administration Building: Unoccupied  
All Other Areas: 24 Hours

Sunday: Administration Building: Unoccupied  
All Other Areas: 24 Hours

#### **HVAC Schedule (On hours, all others considered Off)**

Weekday: Administration Building: from 8:00 a.m. to 5:00 p.m.  
All Other Areas: 24 Hours

Saturday: Administration Building: Unoccupied  
All Other Areas: 24 Hours

Sunday: Administration Building: Unoccupied  
All Other Areas: 24 Hours

#### **Lighting Schedule (On, all others considered Off)**

Weekday: Administration Building: from 8:00 a.m. to 5:00 p.m.  
All Other Areas: 24 Hours - HID and Tunnel Lighting (For all other lighting operating hours, refer to lighting audit following Scope of Services – Exhibit A)

Saturday: Administration Building: Unoccupied  
All Other Areas: 24 Hours - HID and Tunnel Lighting (For all other lighting operating hours, refer to lighting audit following Scope of Services – Exhibit A)

Sunday: Administration Building: Unoccupied  
All Other Areas: 24 Hours - HID and Tunnel Lighting (For all other lighting operating hours, refer to lighting audit following Scope of Services – Exhibit A)

## **DESCRIPTION OF M&V PROCEDURE**

### **Reference: International Performance Measurement and Verification Protocol**

#### **DOCUMENTING BASELINE/INSTALLED EQUIPMENT**

Energy consuming equipment to be replaced or modified as part of an energy conservation project requires a thorough documentation of the installed equipment operating during the baseline and post-installation periods

#### **END-USE RETROFITS: END-USE RETROFITS – MEASURED CAPACITY, MEASURED CONSUMPTION APPROACH**

Measured consumption approach is intended for retrofits where the end use capacity, demand or power level can be measured baseline, and the energy consumption of the equipment or subsystem can be measured post-installation over time. Measured consumption approach can involve a continuous measurement of energy use both before and after the retrofit for the specific equipment or energy end use affected by the retrofit or measurements for a limited period of time necessary to determine retrofit savings. Periodic inspections of the equipment may also be warranted. Energy consumption is calculated by developing statistically representative models of the energy end use capacity (i.e., the kW or Btu/hr) and consumption (i.e., the kWh or Btu).

**Confirming Installed Equipment Performance.** The primary difference between Stipulated consumption approach and Measured consumption approach is that the stipulated approach uses *one-time* baseline and post-installation "snap-shot" capacity, power measurements, or stipulated energy use, whereas measured consumption approach involves portable monitoring equipment installed in a facility for a *period of time or continuously* to measure the in-situ, baseline and post-installation performance of the specific equipment being replaced. Time allotted for installing portable metering devices during the baseline and post-installation periods depends on the type of equipment being measured. For example, the in-situ measurement of constant load motor replacements may take only a few hours or days baseline, and some period of post-installation. Measurement of the 24-hour profile of whole-facility lighting loads may take several weeks to one month to determine average weekday and weekend use (baseline and post-installation). End-use retrofits may not include measurement of whole-facility heating or cooling loads which would be necessary to calculate heating-cooling interaction of a lighting retrofit.

## M&amp;V Options

| FIM # | Site Name | Measures   | M&V<br>Option A<br>Stipulated | M&V<br>Option B<br>Metered<br>Circuits |
|-------|-----------|--|-------------------------------|--|
| 1     | WWTP      | Grit Chamber High Efficiency Motors                    | -                             | X                                      |
| 2     | WWTP      | Oxygen Transfer Stations High Efficiency Motors        | -                             | X                                      |
| 2     | WWTP      | Oxygen Transfer Stations VFDs                          | X                             | -                                      |
| 3     | WWTP      | Modify Oxygen Transfer Stations Operation (Stages 1&2) | X                             | -                                      |
| 4     | WWTP      | Process Water High Efficiency Motors                   | -                             | X                                      |
| 6     | WWTP      | Mixed Liquor Channel High Efficiency Motors            | -                             | X                                      |
| 10a   | WWTP      | Energy Management Expansion                            | NA                            | NA                                     |
| 14    | WWTP      | Natural Gas Engine Drive for Oxygen Compressor         | -                             | X                                      |

## DESCRIPTIONS OF M&V PROCEDURES – OPTION A

- (A) Modify Oxygen Transfer Stations: Electric energy savings will be obtained from reduced hours of operation for six (6) mixer motors. Refer to Scope of Services – Exhibit A, FIM #3.

Energy Savings will be calculated based on the following equation:

$$\text{Savings (kWh)}: \Sigma (\text{kW Measured})_{\text{6 motors}} \times (\text{Hours Base} - \text{Hours New})$$

$$\text{Savings (kW)}: \Sigma (\text{kW Measured})_{\text{6 motors}} \times 83\%$$

Where:

kW Measured = Individual Motor Power Measurements

Hours Base = Baseline Operating Hours (8,760)

Hours New = Post-installation Operating Hours (2,433)

- (B) Oxygen Transfer Stations VFDs: Presently, 2-50 HP, 6-40 HP and 4-25 HP mixer motors operate at constant flow (8,760 Hours/Year). Variable speed drives will be installed on the twelve (12) motors and will be operated at a fixed 20% speed reduction. Refer to Scope of Services – Exhibit A, FIM #2.

Energy Savings will be based on the following equation:

$$\text{kWh Savings: } (\text{Qty} \times \text{kW Measured} \times \text{Hours Base}) \times (\% \text{ Load})^{2.2}$$

Where:

KW Measured = Individual Motor Power Measurements

Qty = Number of Motors (6 oxygen mixer motors)

Hours Base = Baseline Operating Hours (8,760 Hours/Year)

% Load = (% RPM)

% RPM = 80%

## DESCRIPTIONS OF M&V PROCEDURES – OPTION B

- (A) High Efficiency Motors: Energy savings generated by the motor retrofit portion of this program shall be based upon a one-time measurement of the motor energy consumption under existing conditions and a one-time measurement upon completion of the motor retrofit project. The following calculations will be used to determine the amount of annual electrical consumption savings for the entire period of the guarantee:

$$(\text{kW}_{\text{pre}} - \text{kW}_{\text{post}}) = \text{kW savings}$$

$$(\text{kW}_{\text{pre}} \times \text{HRS pre}) - (\text{kW}_{\text{post}} \times \text{HRS Post}) = \text{kWh savings}$$

Where:

|            |  |
|------------|--|
| KW Pre =   | Measured kW before implementation  |
| KW Post =  | Measured kW after implementation   |
| HRS Pre =  | Pre-installation hours (8,760 with the exception of the 1-125 HP mixed liquor channel blower, which operates 4,380/Year).  |
| HRS Post = | Post-installation hours (the same as the HRS Pre with the exception of six (6) mixer motors, which will be reduced to 2,433/Year). The mixer motors are comprised of 2-30 HP and 4-25 HP motors. |

- (B) Install Gas Engine for Main Pump (600 HP) – Approved with Phase II-B: Energy dollar savings for this FIM are comprised of two components: savings derived from fuel switching from electricity to natural gas and savings resulting from effective heat-recovery from the new gas engine.

**Electric Demand and Consumption Savings**

Dollar savings are derived from a reduction in monthly power measured in kilowatts (kW) demand from the electric utility, as well as the generation of electric energy measured in kilowatt-hours (kWh).

*The verification of electric power (kW) savings shall be conducted as follows:*

Electric metering shall be installed on the existing 600 HP electric motor which is to measure and record kW of the existing electric motor (at 15 minute intervals). The dollar savings shall be calculated using the Actual peak kW Savings using the following equation:

$$\text{Monthly Demand \$ saved (\$/kW)} = (\text{Actual Peak kW Savings}) \times (\text{contract \$/kW})$$

Note: Peak kW Savings shall only be claimed for 11 months/year. The 600 HP electric motor shall be operated at least once per year to perform maintenance on the gas engine.

*The verification of electric energy (kWh) savings shall be conducted as follows:*

An electric meter, capable of measuring and recording kWh on a time-of-use basis shall be connected to the existing electric motor. The recorded kWh used during each month shall be multiplied by the respective contract electricity cost per kWh to properly value the electric energy production.

$$\text{Monthly kWh \$ saved (\$/kWh)} = \text{recorded kWh} \times \text{contract \$/kWh}$$

**Heat-Recovery**

Dollar savings are derived from a reduction in energy consumption associated offsetting the space heating thermal loads in buildings #1, #2 and # 4. Through effective recovery of heat energy from the gas engine, the dedicated burning of natural gas necessary space-heating is reduced.

*The verification of heating energy savings (CCF) shall be conducted as follows:*

- A. A flow-meter capable of measuring and recording gallons-per-minute (gpm) flow shall be installed on the inlet line of the energy recovery heat exchanger from the gas

engine. This data shall be used to determine average hourly mass flow rate ( $m_{avg}$ ) through the heat exchanger.

- B. Temperature sensors shall be installed on the inlet and outlet headers of the energy recovery heat exchanger loop on the building load side, to obtain a temperature difference (degrees °F). This temperature data shall be trended on a minute-by-minute basis and be time-stamped. This data shall be used to determine average temperature difference (degrees °F) on an hourly basis.
- C. The actual energy recovered on an hourly basis, measured in British-thermal-units (Btu) shall be calculated as follows:

$$q_r = [(m_{avg}) \times (c_p) \times (\Delta T_{avg})]$$

where:

$q_r$  = actual heat recovered (Btu/hr)

$m_{avg}$  = average mass flow rate (lbs/hr). 1 GPM = 500 lbs/hr

$c_p$  = the specific heat of the heat exchanger loop glycol solution (Btu/lb-°F).  $c_p = 1$  for water

$\Delta T_{avg}$  = average temperature difference (°F)

The equation is simplified and is expressed as follows:

$$q_r = 500 \times \text{GPM} \times (\Delta T_{avg})$$

- D.  $q_r$  is converted to hourly source-CCF saved ( $CCF_{source}$ ) as follows:

$$(CCF_{source}) = (q_r) \times (1 \text{ CCF}/103,000 \text{ Btu}) \times (1/\eta_{system})$$

where:

$(\eta_{system})$  = heating plant operating system efficiency (75% for building 1, 2 and 4)

- E. The value of the hourly heat recovered (\$ saved<sub>hr</sub>) is calculated as follows:

$$\$ \text{ saved}_{hr} = (CCF_{source}) \times (\text{contract \$}/CCF)$$

- F. Monthly Heat Recovery \$ Saved (\$hr-mo) is calculated as follows:

$$\$_{hr-mo} = \sum (\$ \text{ saved}_{hr}) \text{ for the calendar month.}$$

#### Savings Summary Calculation

A meter shall be installed on the natural gas supply line of the engine to measure and record the natural gas consumption of the unit. On a monthly basis, the gas consumption of the unit shall be multiplied by the contract \$ per ccf cost to obtain the gas engine monthly fuel cost (\$<sub>engine</sub>).

$$\text{Monthly Total Savings} = (\$_{kW} + \$_{Kwh} + \$_{hr-mo}) - (\$_{engine}).$$

- (C) Install Gas Engine for Oxygen Compressor (600 HP): Energy dollar savings for this FIM are comprised of two components: savings derived from fuel switching (from electricity to natural gas/Methane blend) and savings resulting from effective heat-recovery from the new gas engine.

**Electric Demand and Consumption Savings**

Dollar savings are derived from a reduction in monthly power measured in kilowatts (kW) demand from the electric utility, as well as the generation of electric energy measured in kilowatt-hours (kWh).

*The verification of electric power (kW) savings shall be conducted as follows:*

Electric metering shall be installed on the existing 600 HP electric motor which is to measure and record kW of the existing electric motor (at 15 minute intervals). The dollar savings shall be calculated using the Actual peak kW Savings using the following equation:

$$\text{Monthly Demand \$ saved (\$/kW)} = (\text{Actual Peak kW Savings}) \times (\text{contract \$/kW})$$

Note: Peak kW Savings shall only be claimed for 11 months/year. The 600 HP electric motor shall be operated at least once per year to perform maintenance on the gas engine.

*The verification of electric energy (kWh) savings shall be conducted as follows:*

An electric meter, capable of measuring and recording kWh on a time-of-use basis shall be connected to the existing electric motor. The recorded kWh used during each month shall be multiplied by the respective contract electricity cost per kWh to properly value the electric energy production.

$$\text{Monthly kWh \$ saved (\$/kWh)} = \text{recorded kWh} \times \text{contract \$/kWh}$$

**Heat-Recovery**

Dollar savings are derived from a reduction in energy consumption associated with heating the hot water that maintains the digesters at 98 °F and offset space heating thermal load in building #4. Through effective recovery of heat energy from the gas engine, the dedicated burning of natural gas necessary for digester and space heating is reduced.

*The verification of heating energy savings (CCF) shall be conducted as follows:*

- A. A flow-meter capable of measuring and recording gallons-per-minute (gpm) flow shall be installed on the inlet line of the energy recovery heat exchanger from the gas engine. This data shall be used to determine average hourly mass flow rate ( $m_{avg}$ ) through the heat exchanger.
- B. Temperature sensors shall be installed on the inlet and outlet headers of the energy recovery heat exchanger loop on the building load side, to obtain a temperature difference (degrees °F). This temperature data shall be trended on a minute-by-minute basis and be time-stamped. This data shall be used to determine average temperature difference (degrees °F) on an hourly basis.

- C. The actual energy recovered on an hourly basis, measured in British-thermal-units (Btu) shall be calculated as follows:

$$q_r = [(m_{avg}) \times (c_p) \times (\Delta T_{avg})]$$

where:

$q_r$  = actual heat recovered (Btu/hr)

$m_{avg}$  = average mass flow rate (lbs/hr). 1 GPM = 500 lbs/hr

$c_p$  = the specific heat of the heat exchanger loop glycol solution (Btu/lb-°F).  $c_p = 1$  for water

$\Delta T_{avg}$  = average temperature difference (°F)

The equation is simplified and is expressed as follows:

$$q_r = 500 \times \text{GPM} \times (\Delta T_{avg})$$

- D.  $q_r$  is converted to hourly source-CCF saved ( $CCF_{source}$ ) as follows:

$$(CCF_{source}) = (q_r) \times (1 \text{ CCF}/103,000 \text{ Btu}) \times (1/\eta_{system})$$

where:

$(\eta_{system})$  = heating plant operating system efficiency (80% for digester boiler and 75% for building 4)

- E. The value of the hourly heat recovered (\$ saved<sub>hr</sub>) is calculated as follows:

$$\$ \text{ saved}_{hr} = (CCF_{source}) \times (\text{contract \$/CCF})$$

- F. Monthly Heat Recovery \$ Saved (\$hr-mo) is calculated as follows:

$$\$_{hr-mo} = \sum (\$ \text{ saved}_{hr}) \text{ for the calendar month.}$$

#### Savings Summary Calculation

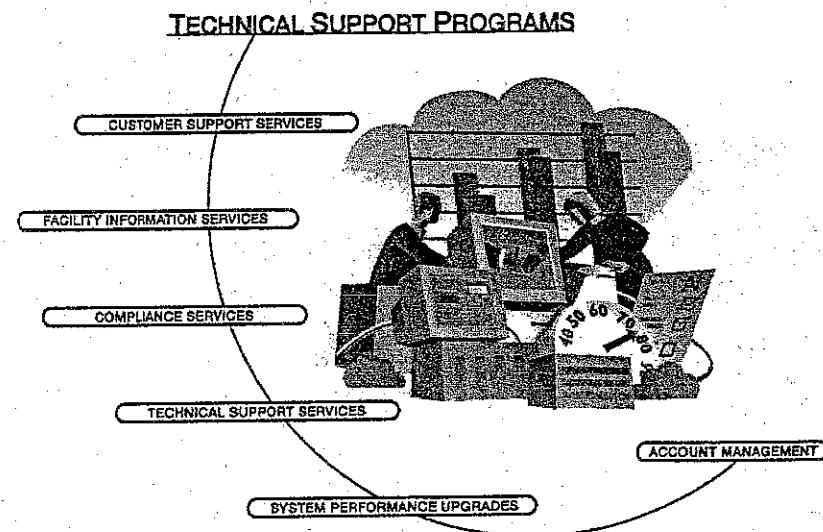
A meter shall be installed on the natural gas supply line of the engine to measure and record the natural gas consumption of the unit. On a monthly basis, the gas consumption of the unit shall be multiplied by the contract \$ per CCF to obtain the engine monthly-natural gas cost (\$<sub>ng</sub>).

A meter shall also be installed on the digester gas (Methane) line of the engine to validate the stipulated Methane supply to the engine (150,917 ccf/Year of equivalent natural gas). Should the yearly Methane production fall below the yearly-stipulated CCF value, natural gas metered shall be re-adjusted to reflect the Methane volume not being met by the plant. For example, assume the yearly Methane production is measured at 105,000 CCF, the engine natural gas consumption (CCF) shall be reduced by 45,917 CCF (150,917 CCF - 105,000 CCF). On a monthly basis, the methane consumption (CCF/year-equivalent natural gas) of the unit shall be multiplied by the contract \$ per CCF to obtain the engine monthly-methane cost (\$<sub>methane</sub>).

$$\text{Monthly Total Savings} = (\$_{kW} + \$_{Kwh} + \$_{hr-mo}) - \$_{ng} + \$_{methane}$$

Siemens Building Technologies, Inc.  
Technical Support Program Proposal

*Prepared for the*  
TOWN OF AMHERST



Included with the Performance Contract is the Performance Assurance Technical Support Program, as described in Exhibit B, Article 2 of the contract. The Performance Assurance services employ a process that is applied to the Town of Amherst Phase IIB Amendment energy savings projects to ensure the improvements we provide function correctly and deliver the savings estimated for the program.

### **Performance Assurance Overview:**

#### **Utility Trending/Tracking**

Upon receiving a copy of your utility bills on a monthly basis, the data will be entered into our energy tracking software package. The report produced compares the current energy consumption against an established base year and corrects for changes in weather conditions. An integral component of Energy Tracking is the on-site time needed throughout the year to check building operating conditions, explore situations that can affect energy savings, and to verify the information found in the energy tracking report. The findings from our on-site visits along with the energy tracking report will be presented annually.

#### **General Problem Resolution**

Problems will come to the project's performance assurance engineer in various ways. Most problems are uncovered through proactive monitoring and investigation. Some problems are identified via staff complaints at the customer's site. Siemens will report to the Town of Amherst.

#### **Remote Diagnostics**

Our engineer's will access the digital control system remotely to inspect present operation and review past operation, via previously trended data. Remote diagnostic analysis is extremely valuable in early identification of energy, comfort and air quality problems, especially in buildings with critical temperature control.

#### **Operator Discussion**

One key to our past success has been good communication between our engineer and the maintenance staff. If a question has emerged due to operator action, we contact the person who made the changes to understand why those changes were made. If changes were made to compensate for a malfunctioning system, we will help uncover the cause of the malfunction and assist in fixing it. If changes were made due to lack of operator knowledge, we will educate the operator on how to operate the system properly and explain the impact changes can have on system performance. Some problems cannot be solved through remote diagnostics or operator discussion. In these cases, we will resolve the problem during an onsite inspection.

#### **Annual Energy Reports**

The annual reports will contain Energy savings results and be presented to the Town of Amherst. These reports will trend the operation of the facility and validate the savings realized as described in the contract Article 3 Exhibit C.

**Corrective Maintenance and Component Replacement; Labor and Material Costs Not Included.** Repair or replace failed or worn components is necessary to minimize obsolescence and to maintain your system in peak operating condition. Components that are suspected of being faulty may be repaired or replaced in advance to prevent system failure.

Labor and material costs are included within the scope of this Technical Support Program.

### Natural Gas Engine

Siemens will provide full coverage of all maintenance issues on the engine over the full 10-year term of this contract. The coverage is described based on the hourly run time of the unit stated below.

When assembling the project, a great deal of time was expended to assure that the proper amount of time and talent was reviewed associated with day-to-day operational duties.

The following is a narrative of responsibilities associated with the engine equipment that parallels industry standards.

### Maintenance: General Description

Included within the project, qualified/authorized service personnel for a gas engine division distributor or its agents shall perform scheduled maintenance services as described in the attached Exhibit(s).

The Owner desires that the equipment be properly serviced to assure proper operation.

The Equipment Provider is willing to provide or arrange for provision to the Owner of the services described.

In consideration of the premises and covenants set forth, we offer the following:

#### **Equipment Provider Responsibilities:**

The Equipment Provider shall provide or otherwise arrange for the number of service visits to the equipment site during the contract as defined.

All service will be conducted during normal business hours, between 8:00 a.m. and 3:30 p.m., Monday through Friday, and emergency service provisions.

After the maintenance visit, the Equipment Provider will, within thirty (30) days, furnish recommendations for additional service and/or adjustments, which the Equipment Provider deems necessary to further assure dependable operation.

#### Equipment Owner Agrees:

To operate the equipment in accordance with operating manuals and instructions supplied by the original equipment manufacturer and perform any interim inspections, service or exercising of the equipment as required or recommended by the manufacturer. (See Exhibit 11 Maintenance Check List)

To be in attendance at all times, during the service by qualified authorized service personnel, to reinforce training and further increase the skill set level.

**Operator Training:**

Maintenance contract will include on-site training for designated operators.

- ▶ Engine Maintenance and Inspection – How to perform daily, weekly, monthly and annual inspections on the engine, including checklist review.
- ▶ Fuel System – System component description, operation, troubleshooting and engine startup and shutdown.
- ▶ Lube Oil Analysis – How to properly take lube oil analysis sample. Understanding the analysis report.
- ▶ Lube Oil System – Understanding how the system operates, pressure adjustment, filter servicing.
- ▶ Ignition System – Changing and re-gapping spark plugs, testing voltage, setting ignition timing.
- ▶ Valve Adjustment – Procedure for setting valves.
- ▶ Cooling System – System overview, filling system with coolant, engine protection set points, coolant analysis.

**Routine Maintenance – General Description:**

Under the service agreement, all planned service will be scheduled as recommended by the Equipment Provider. Maintenance intervals will vary by model and operation, but will be in accordance with the Operation and Maintenance Manual published by the manufacturer.

**Routine Maintenance:*****Lubrication System***

- ▶ Engine lubrication oil analysis
- ▶ Change engine oil
- ▶ Change oil filter
- ▶ Replace oil filter seal
- ▶ Inspect lube oil hoses
- ▶ Lubrication oil and filter disposal
- ▶ Clean oil pan and pump pickup screen

***Air Intake System***

- ▶ Replacement of air filter elements

***Cooling System***

- ▶ Check JW and auxiliary water level and quality
- ▶ Inspect, adjust and lubricate JW and auxiliary water pumps
- ▶ Inspect and replace water pump belts as necessary

***Fuel System***

- ▶ Inspect fuel solenoid, fuel lines and regulator
- ▶ Inspect and repair as necessary carburetor and regulator
- ▶ Inspect and clean pre-chamber gas admission valve as necessary

***Ignition System***

- Replace spark plugs
- Check ignition timing
- Inspect ignition cables, primary and secondary connections, replace when required

***Governor***

- Clean and lubricate linkages

***Lubrication System***

- Engine Lubrication Oil Analysis
- Change Engine Oil

***Additional Items***

- Adjust valves
- Check exhaust system
- Breather inspect and clean
- Battery inspection
- Battery charger inspection
- Belts inspection and/or replacement
- Turbocharger inspection
- Intercooler inspection
- Main and rod bearing inspection
- Accessory items

The Equipment Provider will also perform the top end and first major overhauls according to specifications. In addition, the distributor will make site visit to the customer site for diagnostics, adjustments and minor repairs.

A Top End Overhaul involves the rebuilding of all cylinder heads.

***Cylinder Heads***

- Disassemble and clean cylinder heads
- Magnaflux cylinder heads
- Remove and replace intake and exhaust guides, valves and seats
- Clean and service push rod and rocker arm assemblies
- Adjust valves
- Service pre-chamber gas admission valve (pre-chamber lean burn engines only)

Also included is the replacement of all necessary belts, hoses, gaskets, seals, lube oil, coolant and miscellaneous components required.

A Major Overhaul includes; a Top End Overhaul and:

***Lubrication System***

- Remove and replace inspection door O-rings
- Remove and service oil pickup screen
- Overhaul lube oil pump including relief valve
- Adjust oil pressure
- Remove and replace oil filter elements and oil temperature valve

***Crankshaft***

- Remove and replace crank gear, main bearings, rear oil seal, front seal
- Torque all main bearings

***Crankcase***

- Align bore for crankshaft and camshaft
- Replace camshaft bushings
- Remove and replace cylinder sleeves, pistons, piston rings
- Replace connecting rod bushings and bearings
- Check connecting rod alignment

***Camshaft and Gears***

- Service pushrod tube and replace O-rings
- Replace camshaft bearing inserts
- Service valve lifters

***Gear Cover***

- Perform necessary service work on vibration damper, accessory drive assemblies

***Water Manifolds and Thermostats***

- Replace thermostats and thermostat seals

***Governor***

- Service and adjust governor linkage
- When supplied, overhaul over-speed governor
- Service governor drive assembly

***Fuel System***

- Overhaul carburetor and gas regulator

***Turbocharger***

- Overhaul turbocharger and inspect and service waste-gates

***Breather System***

- Clean and inspect

***Ignition System***

- Replace ignition cables and spark plugs
- Test ignition module

***Cooling System***

- Overhaul jacket water and auxiliary water pumps
- Replace and adjust belts
- Clean oil cooler
- Clean intercooler

The following identifies tasks, which are to be performed on a typical runtime duration:

**Tasks to be Performed by Siemens:**

- Lube oil remove sample for analysis
- Lube oil change to be determined by results of lube oil analysis
- Microspin Filter Service – replace with clean elements, replace paper liner
- Jacket water pump lubricate
- Auxiliary water pump lubricant
- Crankcase breather clean

- ▶ Control linkage clean and lubricate
- ▶ Idler pulley bearings lubricate
- ▶ Ignition module check and verify
- ▶ Lube oil strainer element clean
- ▶ Magnetic plugs clean
- ▶ Oil cooler (oil side drain)
- ▶ Oil separator clean
- ▶ Spark plugs clean and re-gap with new gaskets or replace
- ▶ Tachometer drive lubricate
- ▶ Safety shutdown simulate test
- ▶ Air pre-cleaner filter elements inspect – replace if necessary
- ▶ Governor control end rod and linkage inspect and lubricate
- ▶ Lamps test and replace
- ▶ Lube oil and filter changes
- ▶ Lube oil analysis
- ▶ Air filter replacements as needed
- ▶ Periodic valve adjustments as necessary
- ▶ Bore scope service, to inspect combustion components without dismantling engine
- ▶ Top end (valve) overhaul with rebuilt cylinder heads as needed intervals
- ▶ Replacement of turbocharger with rebuilt turbocharger as needed
- ▶ Replacement of engine jacket water pump with rebuilt pump as needed
- ▶ Replacement of auxiliary circuit water pump with rebuilt pump as needed
- ▶ Major overhaul of engine, inclusive of:
  - Top end overhaul
  - Replacement of all combustion components, pistons, cylinder liners, piston rings
  - Replacement of main bearings
  - Replacement of connecting rod bearings

#### **Three-Month Interval Service by Siemens:**

- ▶ Water temperature gauge test
- ▶ Check air fuel ratio
- ▶ Crankcase pressure check and verify
- ▶ Oil pressure safety switch test
- ▶ Gas pressure regulator adjust and verify
- ▶ Safety controls test
- ▶ Adjust valves
- ▶ Valve cover gaskets replace

#### **Six-Month Interval Service by Siemens:**

- ▶ Bore scope cylinders
- ▶ Crankcase oil pickup screens clean
- ▶ Engine mounting and alignment check and verify
- ▶ Exhaust backpressure check and verify
- ▶ Terminal connections inspect/tighten
- ▶ Replace mag drive disc

#### **Annual Service Tasks by Siemens:**

- ▶ Crankcase oil pickup screens clean
- ▶ Engine mounting and alignment check
- ▶ Engine and exhaust backpressure check

- » Full flow filter relief valve inspect
- » Governor synchronizing motor reduction gears lubricate
- » Carburetor gasket replace
- » Engine belts replace if applicable
- » Carburetor air-gas valve replace
- » Carburetor diaphragm replace
- » Ignition transformer coils clean
- » Engine belts replace
- » Ignition repair H.T. cables

**Operating Inspection.** Through this service we will help to assure mechanical equipment continues to operate efficiently, safely and with little operating disruptions during the operating season. We will provide routine operating inspection(s) to check system performance in accordance with a program of standard routines as determined by our experience, the equipment manufacturer's published recommendations, equipment application and location. This service will focus on equipment operation, fluid levels, operating and safety controls and safe equipment operation. This service will be performed based on equipment runtime and Siemens experience.

**Repair and Replacement Services.** To reduce the effects of unbudgeted repairs, and to maintain your mechanical system in peak operating condition, we will repair or replace failed or worn moving parts (such as: bearings, motor rotors, motor stators, seals, gears, controls and switches). Components that are suspected of being faulty may be repaired or replaced in advance to minimize the occurrence of system interruptions.

**Emergency Onsite Response.** To reduce the costs and disruptions of downtime when an unexpected problem does occur, we will provide Emergency Onsite Response. We will provide this service between scheduled service calls, Monday through Friday, including holidays, 24 hours per day, 7 days per week, to minimize downtime. Non-emergency calls, as determined by your staff and Siemens, will be incorporated into the next scheduled service call.

**Vibration Analysis.** Through vibration analysis we will provide a baseline plot of the equipment under current standard operating conditions. Through subsequent vibration analysis and reports we can provide early detection of potential problems in the equipment by pinpointing possible equipment imbalance. As part of this service we will provide recommendations for any corrective action(s) that are uncovered. If recommendations are within the scope of this proposal, then we will schedule and complete such action(s).

**Oil Analysis Test.** We will provide oil analysis testing on your system(s) to test for the presence of harmful contaminants in the oil. This test provides feedback on the condition of both the oil and the equipment. The frequency will be based on machine run-hours.

The Town of Amherst will not be adding additional staff to perform day-to-day type duties. The outsourced maintenance costs have been included when calculating the simple payback.

Labor and material costs are included within the scope of this Technical Support Program.

### **Emergency System Performance Services**

The Town of Amherst account would be handled by our Buffalo office, which is less than 20 miles from your buildings. As a partner we will provide an emergency service available 24 hours/day, 7 days/week. A qualified Service Technician will arrive at your building within two (2) hours of your service call. We understand that many of your building systems are necessary day and night and will be there for you around the clock in the event of an emergency.

## System Performance Services-Review and Evaluation

### Documentation and Quality Assurance

**Account Management.** We will provide dedicated account management to implement the quality assurance program, supervise the Town of Amherst Maintenance staff and offer technical assistance for the system programs.

**Documentation of All Service Provided.** We will document each on-line and on-site service call and furnish you with a copy showing time, date, and a brief description of activity. Work orders for on-site system assistance will identify, equipment, equipment location, work performed, and any special instructions.

# SIEMENS BUILDING TECHNOLOGIES, INC.

## GENERAL CONDITIONS - EXHIBIT D

These General Conditions are an integral of the Agreement between CLIENT AND SIEMENS for the performance of the Work.

### *Article 1: General*

**1.1** The Agreement, when accepted in writing by CLIENT and approved by an authorized representative of SIEMENS, constitutes the entire, complete and exclusive agreement between the parties relating to the services ("Services") and the equipment ("Equipment") to be provided by SIEMENS as described in the Scope of Services (such Services and Equipment collectively referred to as "Work") and shall supersede and cancel all prior agreements and understandings, written or oral, relating to the subject matter of the Agreement. "Facilities" or "Site" means those building(s) or structure(s) where Work will be installed or implemented.

### *Article 2: Work by SIEMENS*

**2.1** SIEMENS will perform the Work expressly described in this Agreement and in any work release documents or change orders that are issued under this Agreement and signed by both parties. The Work performed by SIEMENS shall be conducted in a manner consistent with the degree of care and skill ordinarily exercised by reputable companies performing the same or similar Work in the same locale acting under similar circumstances and conditions.

**2.2** Unless expressly included in the scope of services, the Work does not include (a) cutting, patching, painting, or refinishing of surfaces, (b) electrical wiring, or (c) maintenance of the Work. SIEMENS will be entitled to additional compensation if it is asked to perform or provide such services.

**2.3** SIEMENS shall perform the Work during its normal working hours, Monday through Friday inclusive, excluding holidays, unless otherwise agreed herein.

**2.4** SIEMENS is not required to conduct safety, reacceptance or other tests, install new devices or equipment or make modifications to any Equipment beyond the Scope set forth in this Agreement. Any CLIENT request to change the Scope or the nature of the Work must be in the form of a mutually agreed change order, effective only when executed by all parties hereto.

**2.5** All reports and drawings specifically prepared for and deliverable to CLIENT pursuant to this Agreement ("Deliverables") shall become CLIENT's property upon full payment to SIEMENS. SIEMENS may retain file copies of such Deliverables. All other reports, notes, calculations, data, drawings, estimates, specifications, manuals, other documents and all computer programs, codes and computerized materials prepared by or for SIEMENS are instruments of SIEMENS' work ("Instruments") and shall remain SIEMENS' property. To the extent specified in the Scope, CLIENT, its employees and agents ("Permitted Users") shall have a right to make and retain copies of Instruments except uncompiled code, and to use all Instruments, provided however, the Instruments shall not be used or relied upon by any parties other than Permitted Users, and such use shall be limited to the particular project and location for which the Instruments were provided. All Deliverables and Instruments provided to CLIENT are for Permitted Users' use only for the purposes disclosed to SIEMENS, and CLIENT shall not transfer them to others or use them or permit them to be used for any extension of the Work or any other project or purpose, without SIEMENS' express written consent. Any reuse of Deliverables or Instruments for other projects or locations without the written consent of SIEMENS, or use by any party other than Permitted Users will be at Permitted Users' and such other party's sole risk and without liability to SIEMENS; and the Permitted Users, jointly and severally shall indemnify, defend and hold SIEMENS harmless from any claims, losses or damages arising therefrom.

**2.6** SIEMENS shall be responsible for any portion of the Work performed by any subcontractor of SIEMENS. SIEMENS shall not have any responsibility, duty or authority to direct, supervise or oversee any contractor of CLIENT or their work or to provide the means, methods or sequence of their work or to stop their work. SIEMENS' work and/or presence at the Site shall not relieve others of their responsibility to CLIENT or to others.

**2.7** (a) SIEMENS warrants that, unless otherwise agreed, all Equipment shall be new and of good quality. Until one year from the date the Equipment is installed all equipment manufactured by SIEMENS or bearing its nameplate will be free from defects in material and workmanship arising from normal use and service.

(b) Labor for all Services, excluding TSP Services, is warranted to be free from defects in workmanship for one year after the Services are performed. TSP services are warranted to be free from defects in workmanship for ninety days after the Services are performed.

(c) Equipment will not fail to function because of errors in processing, providing or receiving date or time data involving dates between January 1, 1999 and March 31, 2001, provided other products and software, including the computer workstation, with which the system interacts properly exchange date and time data with the Equipment.

**2.8** (a) The limited warranties set forth in Section 2.7 will be void as to, and shall not apply to, any Equipment (i) repaired, altered or improperly installed by any person other than SIEMENS or its authorized representative; (ii) subjected to unreasonable or improper use or storage, used beyond rated conditions, operated other than per SIEMENS' or the manufacturer's instructions, or otherwise subjected to improper maintenance, negligence or accident; (iii) damaged because of any use of the Equipment after CLIENT has, or should have, knowledge of any defect in the Equipment; or (iv) not manufactured, fabricated and assembled by SIEMENS or not bearing SIEMENS' nameplate. However, SIEMENS assigns to CLIENT, without recourse, any and all assignable warranties available from any manufacturer, supplier, or subcontractor of such Equipment.

(b) Any claim under the limited warranty granted above must be made in writing to SIEMENS within thirty (30) days after discovery of the claimed defect, or with respect only to the warranty set forth in Subsection 2.7(c) prior to April 1, 2001, unless discovered directly by SIEMENS. Such limited warranty only extends to CLIENT and not to any subsequent owner of the Equipment. CLIENT's sole and exclusive remedy for any Equipment or Services not conforming with this limited warranty is limited to, at SIEMENS' option, (i) repair or replacement of defective components of covered Equipment, or (ii) reperformance of the defective portion of the Services, or (iii) to the extent previously paid, the issuance of a credit or refund for the original purchase price of such defective component or portion of the Equipment or Services.

(c) SIEMENS shall not be required to repair or replace more than the component(s) of the Equipment or portion of the Services actually found to be defective. SIEMENS' warranty liability shall not exceed the purchase price of such item. Repaired or replaced Equipment or Services will be warranted hereunder only for the remaining portion of the original warranty period.

**2.9** THE EXPRESS LIMITED WARRANTIES PROVIDED ABOVE ARE IN LIEU OF AND EXCLUDE ALL OTHER WARRANTIES, STATUTORY, EXPRESS, OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY EXPRESSLY DISCLAIMED. SIEMENS MAKES NO WARRANTY, EXPRESS OR IMPLIED, THAT ANY EQUIPMENT PROVIDED HEREUNDER WILL PREVENT ANY LOSS, OR WILL IN ALL CASES PROVIDE THE PROTECTION FOR WHICH IT IS INSTALLED OR INTENDED. THE LIMITED EXPRESS WARRANTIES AND REPRESENTATIONS SET FORTH IN THIS AGREEMENT MAY ONLY BE MODIFIED OR SUPPLEMENTED IN A WRITING SIGNED BY A DULY AUTHORIZED CORPORATE OFFICER OF SIEMENS.

**2.10** SIEMENS will not be responsible for the maintenance, repair or replacement of, or Services necessitated by reason of: (a) non-maintainable, non-replaceable or obsolete parts of the Equipment, including but not limited to ductwork, shell and tubes, heat exchangers, coils, unit cabinets, casings, refractory material, electrical wiring, water and pneumatic piping, structural supports, cooling tower fill, slats and basins, etc. unless otherwise specifically stated herein; or (b) negligence, abuse, misuse, improper or inadequate repairs or modifications, improper operation, lack of operator maintenance or skill, corrosion, erosion, improper or inadequate water treatment by others, electrolytic action, chemical action, failure to comply with manufacturer's operating and environmental requirements, Acts of God, or other reasons beyond its control. Unless expressly agreed in writing, SIEMENS is not responsible for the removal or reinstallation of replacement valves, dampers, or waterflow and tamper switches with respect to pipes and ductwork, including vent or drain system. SIEMENS assumes no responsibility for any service performed on any Equipment other than by SIEMENS or its agents.

### *Article 3: Responsibilities of CLIENT*

**3.1** CLIENT, without cost to SIEMENS, shall:

(a) Designate a contact person with authority to make decisions for CLIENT regarding the Work and provide SIEMENS with information sufficient to contact such person in an emergency;

(b) Provide a prompt, in any event within (5) business days of receipt,

response to any proposals, inquiries, notices, samples, change requests, or any document requesting an answer or decision submitted by SIEMENS;

- (c) Provide or arrange for 24 hour, 7 day per week access and make all reasonable provisions for SIEMENS to enter any Site where Work is to be performed;
- (d) Provide or arrange any removal, replacement or refinishing of the building structure or finishes that may be required to gain access to the Equipment or location any Work is to be performed;
- (e) Permit SIEMENS to control and/or operate all building controls, systems, apparatus, equipment and machinery necessary to perform the Work;
- (f) Furnish SIEMENS with blueprints, surveys, legal descriptions, waste management plans and all other available information pertinent to the Work and any Site where the Work is to be performed as may be reasonably requested by SIEMENS;
- (g) Furnish SIEMENS with all approvals, permits and consents from government authorities and others as may be required for performance of the Work except for those SIEMENS has expressly agreed in writing to obtain;
- (h) Notify SIEMENS promptly of all known or suspected Hazardous Materials at the Site, of any contamination of the Site by Oil or Hazardous Material, and of any other conditions requiring special care or which may reasonably be expected to affect the Work, and provide SIEMENS with any available documents describing the quantity, nature, location and extent of such materials, contamination or conditions;
- (i) Comply with all laws and provide any notices required to be given to any government authorities in connection with the Work, except such notices SIEMENS has expressly agreed in writing to give;
- (j) Provide SIEMENS with legally required materials and information (including but not limited to Material Safety Data Sheets) related to all Hazardous Materials located at any Site where the Work is to be performed;
- (k) Furnish to SIEMENS any contingency plans, safety programs and other policies, plans or programs related to any Site where the Work is to be performed;
- (l) Operate, service and maintain all Equipment according to the manufacturer's recommendations including those set forth in the manufacturer's operating manuals or instructions, as well as all requirements of applicable law or of authorities having jurisdiction. The CLIENT shall furnish all needed servicing and parts for said ECMs, which parts shall become part of the ECMs. Such Equipment shall be operated only in the specified operating environment, which shall be supplied by CLIENT, including without limitation: (a) suitable electrical service, including clean, stable, properly conditioned power, to all Equipment; (b) telephone lines, capacity and connectivity as required by such Equipment; and (c) heat, light, air conditioning or other environmental controls, and other utilities in accordance with the specifications for the Equipment;
- (m) Promptly notify SIEMENS of any unusual or materially changed operating conditions, hours of usage, system malfunctions or building alterations that may affect the Equipment or energy usage or any Services; and
- (n) If applicable, provide and pay for a dedicated voice grade dial-up phone line and install a terminal block in a mutually agreed upon location. All on-line service Equipment (not including the phone line) will remain the property of SIEMENS unless otherwise stated herein.

3.2 CLIENT acknowledges that the technical and pricing information contained in this Agreement is confidential and proprietary to SIEMENS and agrees not to disclose it or otherwise make it available to others without SIEMENS' express written consent.

3.3 CLIENT acknowledges that it is now and shall at all times remain in control of the project Site. Except as expressly provided herein, SIEMENS shall not be responsible for the adequacy of the health or safety programs or precautions related to CLIENT's activities or operations, CLIENT's other contractor, the work of any other person or entity, or Site conditions. SIEMENS shall not be responsible for inspecting, observing, reporting or correcting health or safety conditions or deficiencies of CLIENT or others at the Site. So as not to discourage SIEMENS from voluntarily addressing health or safety issues while at the Site, in the event SIEMENS does address such issues by making observations, reports, suggestions or otherwise, SIEMENS shall not be liable or responsible on account thereof.

**Article 4. Changes; Delays; Excused Performance**

4.1 As the Work is performed, conditions may change or circumstances outside SIEMENS' reasonable control (including changes of law) may develop which would require SIEMENS to expend additional costs, effort or time to complete the Work, in which case SIEMENS will notify CLIENT and an equitable adjustment will be made to SIEMENS' compensation and the time for performance. In the event conditions or circumstances require the

Work to be suspended or terminated, SIEMENS shall be compensated for Work previously performed and for costs reasonably incurred in connection with the suspension or termination.

4.2 Either party may request additions, deletions, modifications or changes to the Work. Any such requests shall only become effective upon execution of a written agreement by authorized representatives of both parties.

4.3 SIEMENS may, in its sole discretion, substitute alternative parts, goods or equipment in the performance of the Work, provided that any such substitution shall be of an equal or better quality.

4.4 SIEMENS shall not be responsible for loss, delay, injury, damage or failure of performance that may be caused by circumstances beyond its control, including but not restricted to acts or omissions by CLIENT or its employees, agents or contractors, Acts of God, war, civil commotion, acts or omissions of government authorities, fire, theft, corrosion, flood, water damage, lightning, freeze-ups, strikes, lockouts, differences with workmen, riots, explosions, quarantine restrictions, delays in transportation, or shortage of vehicles, fuel, labor or materials. In the event of such delay or failure, the time for performance shall be extended by a period equal to the time lost plus a reasonable recovery period and the compensation shall be equitably adjusted to compensate for additional costs SIEMENS incurs due to such delay. If any such delay exceeds sixty (60) days, SIEMENS may terminate this Agreement upon three (3) days notice to CLIENT and CLIENT shall promptly pay SIEMENS for the allocable portion of the Work completed and for any costs and expenses of termination and for any loss or damage incurred with respect to materials, equipment, tools and machinery, including reasonable overhead and profit.

#### **Article 5: Compensation**

5.1 Unless otherwise agreed in writing, SIEMENS shall be compensated for any extra work requested by CLIENT at its prevailing rates and shall be reimbursed for costs and expenses (plus reasonable profit and overhead) reasonably incurred in its performance of the Work. The Contract Sum provides for, and is in consideration of, only the services specifically included under the Scope of Services. All other Services, including but not limited to the following, shall be separately billed or surcharged on a time and materials basis: (a) emergency Services performed at CLIENT's request, if inspection does not reveal any deficiency covered by the Scope of Services; (b) Services performed at CLIENT's request at times other than during SIEMENS' normal working hours; and (c) Services performed on equipment not covered by the Scope of Services.

5.2 Unless otherwise agreed in writing, SIEMENS may invoice CLIENT on a monthly or other progress-billing basis. Invoices are due and payable upon receipt by CLIENT. If CLIENT disagrees with any portion of an invoice, it shall notify SIEMENS in writing of the amount in dispute and the reason for its disagreement within 21 days of receipt of the invoice, and shall pay the portion not in dispute.

5.3 SIEMENS may suspend or terminate the Work at any time if payment is not received when due and shall be entitled to compensation for the Work previously performed and for costs reasonably incurred in connection with the suspension or termination.

5.4 On amounts not paid within 30 days of invoice date, CLIENT shall pay interest from invoice date until payment is received at the lesser of 12% per annum or the maximum rate allowed by law. CLIENT shall reimburse SIEMENS for SIEMENS' costs and expenses (including reasonable attorneys' and witnesses' fees) incurred for collection under this Agreement.

5.5 Except to the extent expressly agreed in writing, SIEMENS' fees do not include any taxes, excises, fees, duties or other government charges related to the Work, and CLIENT shall pay such amounts or reimburse SIEMENS for any amounts it pays. If CLIENT claims that Work is subject to a tax exemption or direct payment permit, it shall provide SIEMENS with a valid exemption certificate or permit and indemnify, defend and hold SIEMENS harmless from any taxes, costs and penalties arising out of the use or acceptance of same.

#### **Article 6. Acceptance**

6.1 When SIEMENS believes that all, or an independent, definable phase or portion, of the Work is Substantially Complete, SIEMENS will submit a Certificate of Substantial or Final Completion to the CLIENT. If the described portion of the Work as performed is Substantially Complete as defined herein, the CLIENT will accept that Work by signing the Certificate of Substantial or Final Completion and returning it to SIEMENS. If the Work is not Substantially Complete, then the CLIENT Representative shall notify SIEMENS within five (5) business days of any discrepancies and SIEMENS shall correct the Work to conform to the description of the Work set forth herein and resubmit the Certificate of Substantial or Final Completion to the CLIENT if SIEMENS agrees with the notice of discrepancies or, if SIEMENS disagrees with the notice, notify CLIENT of its disagreement and such

disagreement shall be resolved under the terms of this Agreement. If the CLIENT Representative does not deliver written notice to SIEMENS within five (5) business days of receiving the Certificate of Substantial or Final Completion, the CLIENT will be deemed to have agreed to, signed and returned the Certificate of Substantial or Final Completion. Any disputes concerning the completion or Substantial Completion of the Work will be resolved by submitting the issue to a third party professional engineering firm acceptable to both SIEMENS and the CLIENT. The determination of this firm with respect to completion or Substantial Completion will be final and binding upon the parties hereto. SIEMENS and the CLIENT shall share equally the costs or fees for such firm in connection with such dispute resolution process.

**6.2 "Substantial Completion" or "Substantially Complete"** means the first to occur of the following: (i) the Work, or any identifiable portion thereof, is sufficiently complete, in accordance with the provisions of this Agreement relating to the scope of the Work, that CLIENT will be able to realize from such Work substantially all of the practical benefits intended to be gained therefrom, or otherwise to employ the Work or the Equipment associated therewith for their intended purposes; or (ii) temporary, qualified or final certificates of occupancy have been issued with respect to such portions of the Work by the appropriate public authority.

#### **Article 7: Insurance and Allocation of Risk**

**7.1** SIEMENS shall maintain the following insurances while performing the Work:

- (a) Workers' Compensation at the statutory amounts and limits as prescribed by applicable law.
  - (b) Employer's Liability insurance (and, where applicable, Stop Gap extended protection endorsement) limits of liability shall be:
- \$1,000,000 per occurrence  
\$1,000,000 Disease Policy  
\$1,000,000 Each Employee

(c) SIEMENS shall carry, in the Occurrence Coverage Form, Comprehensive General Liability or Commercial General Liability, insurance covering SIEMENS' operations and providing insurance for bodily injury and property damage with limits of liability stated below and including coverage for:

- Products and Completed Operations
- Contractual Liability insuring the obligations assumed by SIEMENS in this Agreement
- Broad Form Property Damage (including Completed Operations)
- Explosion, Collapse and Underground Hazards
- Personal Injury Liability

Limits of liability shall be:

\$1,000,000 per occurrence/aggregate

(d) SIEMENS shall carry Automobile Liability Insurance in the Occurrence Coverage Form covering all owned, hired and non-owned automobiles and trucks used by or on behalf of SIEMENS providing insurance for bodily injury liability and property damage liability for the limits of:

\$1,000,000 per occurrence/aggregate

(e) SIEMENS shall carry Excess Liability Insurance in the Occurrence Coverage Form with limits of:

\$5,000,000 per occurrence/aggregate

**7.2** CLIENT will maintain, at its own expense, property insurance written on a builder's risk "all-risk" or equivalent policy form in the amount of the initial Contract Sum, plus the value of subsequent modifications and cost of materials supplied or installed by others, on a replacement cost basis without optional deductibles. Such property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by SIEMENS, until final payment has been made to SIEMENS or no person or entity other than CLIENT has an insurable interest in the property, whichever is later. The policy form shall include without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and start-up, rebuilding and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for SIEMENS' services and expenses required as result of such insured loss. If the insurance requires deductibles or retentions, the CLIENT shall pay costs not covered because of such deductibles or retentions. This insurance shall cover portions of the work off the Site, and also portions of the work in transit. Partial occupancy or use shall not commence unless the insurance company providing this insurance has consented to such partial occupancy or use by endorsement for otherwise. The CLIENT shall purchase and maintain boiler and machinery insurance which shall specifically cover such insured objects during

installation and until Acceptance by the CLIENT. The insurances required by this section shall include the interests of the CLIENT, SIEMENS, subcontractor and sub-subcontractor in the Work. SIEMENS shall be included as an additional insured on each such insurance coverage. The CLIENT and SIEMENS waive all rights against each other and any of their subcontractors, sub-subcontractors, agents and employees for damages caused by fire or other causes of loss to the extent covered by the insurance required by this section and for any other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the CLIENT as fiduciary. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged. Insurance certificates shall be furnished upon request.

**7.3** Risk of loss of materials and Equipment furnished by SIEMENS shall pass to CLIENT upon their delivery to the Site, and CLIENT shall be responsible for protecting and insuring them against theft and damage. However, until SIEMENS is paid in full, SIEMENS shall retain title for security purposes only and the right to repossess the materials and Equipment.

**7.3** SIEMENS will indemnify CLIENT from and against losses, claims, expenses and damages (including reasonable attorney's fees) for personal injury or physical damage to property (collectively "Damages"). Such indemnification shall be solely to the extent the Damages are caused by or arise directly from SIEMENS' or its employees', consultants' or agents' negligent acts or omissions or willful misconduct in connection with SIEMENS' performance of the Work. SIEMENS' obligations under this indemnity shall not extend to Damages arising out of or in any way attributable to the negligence of CLIENT or its agents, contractors or employees. SIEMENS reserves the right to control the defense and settlement of any claim for which SIEMENS has an obligation to indemnify hereunder. In no event shall CLIENT or SIEMENS be liable under this indemnity or otherwise under this Agreement for special, indirect, incidental, punitive, exemplary or consequential damages, including commercial loss, loss of use, or lost profits, however caused, even if SIEMENS or CLIENT have been advised of the possibility of such damages.

**7.4** SIEMENS shall defend, indemnify and hold harmless CLIENT from and against any claim, suit, demand or action alleging that the use of the Work infringes a U.S. patent, copyright or trademark or misappropriates any trade secret or violates any other intellectual property rights of any third party; provided however, that (i) CLIENT shall give SIEMENS immediate written notice of such action and all prior claims relating thereto; and (ii) CLIENT shall fully cooperate with SIEMENS in the defense of such action and all negotiations for its settlement or compromise.

**7.5** The parties acknowledge that the price for which SIEMENS has agreed to perform the Work and obligations under this Agreement was calculated based upon the foregoing allocations of risk, and that each party has expressly relied on, and would not have entered into this Agreement but for, such allocations of risk.

#### **Article 8: Hazardous Materials Provisions**

**8.1** The Work does not include directly or indirectly performing or arranging for the detection, testing, handling, storage, removal, treatment, transportation, disposal, monitoring, abatement or remediation of any contamination of any Site at which Work is performed and any soil or groundwater at the Site by petroleum or petroleum products (collectively called "Oil"), asbestos, PCBs or hazardous, toxic, radioactive or infectious substances, including any substances regulated under RCRA, CERCLA or any other federal, state or local environmental laws, regulations, statutes, rules, standards or ordinances (collectively called "Hazardous Materials"), including without limitation ionization smoke detectors, ballasts, mercury bulb thermostats, used oil, contaminated filters, contaminated absorbents, and refrigerant. Except as expressly disclosed pursuant to Section 8.2, CLIENT represents and warrants that there are no Hazardous Materials or Oil, present at CLIENT's locations where the Work is to be performed. SIEMENS will notify CLIENT immediately if it discovers or reasonably suspects the presence of any previously undisclosed Oil or Hazardous Material. All Services have been priced and agreed to by SIEMENS in reliance on CLIENT's representations as set forth in Article 8. The discovery or reasonable suspicion of Hazardous Materials or hazardous conditions at a Site where SIEMENS is to perform Work or of contamination of the Site by Oil or Hazardous Materials not previously disclosed pursuant to Section 8.2 shall entitle SIEMENS to suspend the Work immediately, subject to mutual agreement of terms and conditions applicable to any further Work, or to terminate the Work and to be paid for Work previously performed.

**8.2** CLIENT warrants that, prior to the execution of the Agreement, it notified SIEMENS in writing of any and all Oil or Hazardous Materials present, potentially present or likely to become present at the Site and provided a copy of any Site safety policies and information, including but not limited to lock-out and tag procedures, chemical hygiene plan, material safety data sheets, and other items covered or required to be disclosed or maintained by federal, state, or local laws, regulations or ordinances.

**8.3** Regardless of whether or not the Oil or Hazardous Material was disclosed pursuant to Section 8.2, CLIENT shall be solely responsible for properly testing, abating, encapsulating, removing, disposing, remedying or neutralizing such Oil or Hazardous Materials, and for the costs thereof. Even if an appropriate change order has been entered into pursuant to Section 8.1, SIEMENS shall have the right to stop the Work until the Site is free from Oil or Hazardous Materials. In such event, SIEMENS will receive an equitable extension of time to complete the Work, and compensation for delays caused by Oil or Hazardous Materials remediation. In no event shall SIEMENS be required or construed to take title, ownership or responsibility for such Oil or Hazardous Materials. CLIENT shall sign any required waste manifests in conformance with all government regulations, listing CLIENT as the generator of the waste. If someone other than CLIENT is the generator of the waste, CLIENT shall arrange for such other person to sign such manifests.

**8.4** For separate consideration of \$10 and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, CLIENT shall indemnify, defend and hold SIEMENS harmless from and against any damages, losses, costs, liabilities or expenses (including attorneys' fees) arising out of any Oil or Hazardous Materials or from CLIENT's breach of, or failure to perform its obligations under, Sections 8.1, 8.2 or 8.3.

#### *Article 9: Miscellaneous Provisions*

**9.1** Notices between the parties shall be in writing and shall be hand delivered or sent by certified mail, express courier, or acknowledged telefax properly addressed to the appropriate party. Any such notice shall be deemed to have been received when delivered in person or when sent by telefax, or five (5) business days subsequent to deposit in the U.S. mails, or one (1) day after deposit with express courier.

**9.2** Neither CLIENT nor SIEMENS shall assign or transfer any rights or obligations under this Agreement, except that either party may assign this Agreement to its affiliates and SIEMENS may use subcontractors in the performance of the Work. Nothing contained in this Agreement shall be construed to give any rights or benefits to anyone other than CLIENT and SIEMENS without the express written consent of both parties.

**9.3** This Agreement shall be governed by and construed in accordance with the laws of the state or commonwealth within which the Facilities are located.

**9.4** this Agreement and all provisions of this Agreement allocating responsibility or liability between the parties shall survive the completion of the Work and the termination of this Agreement.

**9.5** SIEMENS' performance of the Work is expressly conditioned on CLIENT's assenting to all of the terms of this Agreement, notwithstanding any different or additional terms contained in any writing at any time submitted or to be submitted to SIEMENS by CLIENT relating to the Work, even if signed by SIEMENS, unless SIEMENS signs a written statement expressly indicating that such terms supersede the terms of this Agreement.

**9.6** Any provision of this Agreement found to be invalid, unlawful or unenforceable by a court of law shall be ineffective to the extent of such invalidity, and deemed severed herefrom, without invalidating the remainder of this Agreement. All other provisions hereof shall remain in full force and effect.

**9.7** The waiver by a party of any breach by the other party of any term, covenant or condition hereof shall not operate as a waiver of any subsequent breach hereof. No waiver shall operate or be effective unless made in writing and executed by the party to be bound thereby.

#### *Article 10: TSP Equipment Testing, Inspection and Maintenance*

**10.1** "Technical Support Program" or "TSP" means the technical services to be provided by SIEMENS to the CLIENT during the Performance Guarantee Period, commencing on the Acceptance Date, which are as described in the Scope of Services, Exhibit A. "TSP Services" means the Services performed pursuant to the Technical Support Program as stated in the Scope of Services, Exhibit A. "TSP Scope" means the scope of services to be performed under the Technical Support Program as stated in the Scope of Services, Exhibit A.

**10.2** The CLIENT represents that all Equipment not installed by SIEMENS under this Agreement and subject to the TSP is in satisfactory working

condition. Except as set forth below, by the latter of the first thirty (30) days of this Agreement or the first scheduled inspection, SIEMENS will have inspected all such Equipment. Testing and inspection will not be deemed to be complete until all such Equipment has been so tested and inspected.

**10.3** If the Equipment is altered or moved by any person, including CLIENT, other than SIEMENS or a person authorized by it, CLIENT shall immediately notify SIEMENS in writing, and SIEMENS reserves the right to perform a reacceptance test on, or if necessary a recommissioning of, the system at CLIENT's expense.

**10.4** If SIEMENS reasonably determines as a result of such inspection and/or testing that any Equipment requires repair or replacement, the CLIENT will be so notified and shall take corrective action within thirty (30) days, or such Equipment shall be removed from coverage hereunder without further action by the parties. SIEMENS is not liable or responsible for the continued testing, maintenance, repair, replacement or operating capabilities of any portion of the Equipment until it has been inspected and/or tested and has been, if necessary, restored to an acceptable initial condition at CLIENT's sole expense. Any services provided by SIEMENS in the course of such restoration will be separately charged, on a time and materials basis, and not included in fees paid hereunder. If individual items of Equipment cannot, in SIEMENS' sole determination, be properly repaired or replaced due to age, obsolescence, lack of availability of refrigerant gas, halon gas, necessary parts, materials, compatibility or otherwise, or as a result of excessive wear or deterioration, SIEMENS may, within ten (10) days of such inspection, give written notice that it is withdrawing such items from coverage under this TSP Agreement and adjust the TSP Payments due hereunder accordingly.

**10.5** If the removal of Equipment from coverage would compromise or impair the integrity of the Work or compliance with law of any system, then SIEMENS will provide a written statement thereof for execution by CLIENT. CLIENT's failure to execute such statement within ten (10) days will void the TSP and release SIEMENS from any further obligations with respect to the TSP.

**10.6** If the Contract Documents provide for Equipment maintenance, any repairs and replacements of Equipment by SIEMENS are limited to restoring the proper working condition of such Equipment. SIEMENS will not be obligated to provide replacement Equipment that represents significant capital improvement compared to the original. Exchanged components become the property of SIEMENS, except Hazardous Materials, which under all circumstances remain the property and responsibility of CLIENT.

**10.7** SIEMENS will have no liability or obligation to continue providing TSP Services or any Guaranteed Savings under any Performance Guarantee in the event CLIENT (a) terminates the TSP; (b) fails to authorize a reacceptance test or recommissioning that SIEMENS reasonably deems necessary; (c) fails to notify SIEMENS of any modifications or changes to the Equipment or unusual or materially changed operating conditions, hours of usage, system malfunctions or building alterations that may affect the Equipment, energy usage or any Services as required by the Contract Documents; (d) fails to notify SIEMENS of any conditions, malfunctions or changes as required by the Contract Documents; (e) fails to provide the access to any Site where Work is to be performed as required by the Contract Documents; or (f) fails to operate, service or maintain the Equipment in accordance with 3.1(l) or any other applicable provisions of this Agreement.



Siemens Building Technologies, Inc.

Address:

Phone:

Fax:

## CERTIFICATE OF SUBSTANTIAL COMPLETION

Agreement # 232-MQ-6076 / 990080

Agreement

Agreement Date \_\_\_\_\_

On the date indicated below we have accepted the Work described in said Agreement.

Our acceptance of the Work means the Work (1) has been delivered, installed and subjected to all necessary pre-operational testing, (2) has been inspected by us, (3) is in good order and condition, (4) conforms to applicable specifications, requirements and standards, (5) requires no improvement, modifications or additions to be completed for its intended use, and (6) is by this Certificate of Substantial Completion accepted by us as satisfactory in all respects.

Client: \_\_\_\_\_

Authorized Signature: \_\_\_\_\_

Printed or Typed Name: \_\_\_\_\_

Title: \_\_\_\_\_

Acceptance Date: \_\_\_\_\_

# Town of Amherst Phase II-B Amendment Approximate Project Schedule

| ID | Task Name   | Start        | Finish      | January |   | February |   | March |   | April |   | May |   | June |   |   |
|----|---|--------------|-------------|---------|---|----------|---|-------|---|-------|---|-----|---|------|---|---|
|    |   |              |             | M       | E | B        | M | E     | B | M     | E | B   | M | E    | B | M |
| 1  | Engineering Design                                    | Wed 12/19/01 | Thu 1/31/02 |         |   |          |   |       |   |       |   |     |   |      |   |   |
| 2  | Major Equipment Ordering                              | Tue 1/1/02   | Mon 2/11/02 |         |   |          |   |       |   |       |   |     |   |      |   |   |
| 3  | FIM #1 Grit Chamber High Efficiency Motors            | Fri 3/1/02   | Tue 4/30/02 |         |   |          |   |       |   |       |   |     |   |      |   |   |
| 4  | FIM #2 Oxygen Transfer Basins High Eff. Motors/VFDs   | Fri 3/1/02   | Tue 4/30/02 |         |   |          |   |       |   |       |   |     |   |      |   |   |
| 5  | FIM #3 - Modify Oxygen Transfer Basins Operation      | Fri 3/1/02   | Wed 5/15/02 |         |   |          |   |       |   |       |   |     |   |      |   |   |
| 6  | FIM #4 - Process Water High Efficiency Motors         | Fri 3/1/02   | Tue 4/30/02 |         |   |          |   |       |   |       |   |     |   |      |   |   |
| 7  | FIM #6 - Mixed Liquor Channel High Efficiency Motors  | Fri 3/1/02   | Tue 4/30/02 |         |   |          |   |       |   |       |   |     |   |      |   |   |
| 8  | FIM #10a - Energy Management System Expansion         | Fri 3/1/02   | Fri 5/31/02 |         |   |          |   |       |   |       |   |     |   |      |   |   |
| 9  | FIM #14 - Nat. Gas Engine Drive for Oxygen Compressor | Wed 1/16/02  | Wed 6/19/02 |         |   |          |   |       |   |       |   |     |   |      |   |   |

|   |            |                       |                    |
|---|------------|-----------------------|--------------------|
| Project: Town of Amherst WWTP<br>Project Start Date: 12/19/01 | Task Split | Summary               | Rolled Up Progress |
|   | Progress   | Rolled Up Task        | External Tasks     |
|   | Milestone  | Rolled Up Split       | Project Summary    |
|   |            | Rolled Up Milestone ◇ |                    |

12-14-01